

HANDICRAFT
AT THE



UNIVERSITY OF
TORONTO PRESS



Digitized by the Internet Archive
in 2010 with funding from
University of Toronto

W. H. N.

7735

1

THE

NEW YORK



MEDICAL JOURNAL.

A

WEEKLY REVIEW OF MEDICINE.

EDITED BY

FRANK P. FOSTER, M.D.

1940 89
5.2.25

VOLUME LX.

JULY TO DECEMBER, 1894, INCLUSIVE.



NEW YORK:
D. APPLETON AND COMPANY,
75 FIFTH AVENUE.
1894.

R
11.
I 65
v. 60

COPYRIGHT, 1894,
BY D. APPLETON AND COMPANY.

LIST OF CONTRIBUTORS TO VOLUME LX

(EXCLUSIVE OF ANONYMOUS CORRESPONDENTS).

Those whose names are marked with an asterisk have contributed editorial articles.

ACHARD, H. J., M. D., Manchester, N. H.
 AGRAMONTE, ARISTIDES, M. D.
 ALGER, ELLICE M., M. D.
 AROHER, HARRY M., M. D.
 *ARMSTRONG, S. T., M. D.
 ASHMEAD, ALBERT S., M. D.
 AUDLE, JOHN, M. D., Philadelphia.
 AXTELL, E. R., M. D., Denver, Col.
 BABCOCK, ROBERT H., M. D., Chicago.
 BALDWIN, S. C., M. D., Helena, Mont.
 BARNES, WILLIS A., M. D.
 BARTON, THOMAS J., M. D., Tivoli, N. Y.
 BEAN, C. E., M. D., St. Paul, Minn.
 BECK, CARL, M. D.
 BELLAMY, RUSSELL, M. D., Colorado Springs, Col.
 BIRKETT, H. S., M. D., Montreal.
 BISHOP, E. STANMORE, F. R. C. S., Manchester, Eng.
 BLACK, G. MELVILLE, M. D., Denver, Col.
 BLISS, ARTHUR AMES, M. D., Philadelphia.
 BODENHAMER, WILLIAM, M. D., LL. D., New Rochelle, N. Y.
 BOZEMAN, NATHAN G., Ph. B., M. D.
 BRADFORD, EDWARD H., M. D., Boston.
 BRADLEY-BYSTRÖM, ELIZABETH N., M. D.
 BRANNAN, JOHN WINTERS, M. D.
 BRADY, F. O., M. D., Chicago.
 BROWN, C. B., M. D., Sycamore, Ill.
 BROWN, J. W. E., M. D., Toronto.
 BROWNE, LENNOX, London, Eng.
 BUCKMASTER, A. H., M. D., Charlottesville, Va.
 BULL, CHARLES STEDMAN, M. D.
 BURNS, JOHN FRANCIS, M. D., Long Island City, N. Y.
 BUTLER, GLENTWORTH R., M. D., Brooklyn.
 CALDWELL, GEORGE W., M. D.
 CARSTENS, HENRY, M. D., Detroit.
 CARSWELL, ELIZABETH R., New York.
 CARVELLE, H. D. W., M. D., Manchester, N. H.
 CASSELLBERRY, W. E., M. D., Chicago.
 *CHAPIN, HENRY DWIGHT, M. D.
 CHAPPELL, WALTER F., M. D.
 CHEESMAN, WILLIAM S., M. D., Auburn, N. Y.
 CLEAVES, MARGARET A., M. D.
 *CRANDALL, FLOYD M., M. D.
 CULVER, EVERETT M., M. D.
 CUMMINS, R. H., M. D., Wheeling, West Va.
 CUNNINGHAM, R. H., M. D., Richmond, Va.
 *CURRIER, ANDREW F., M. D.
 CURRIER, CHARLES G., M. D.
 DAILY, W. H., M. D., Pittsburgh, Pa.
 DAVIS, L. W., M. D., Knoxville, Tenn.
 DAVIS, W. E. B., M. D., Birmingham, Ala.
 DELAVAN, D. BRYSON, M. D.
 DENISON, CHARLES, M. D., Denver, Col.
 DE ROALDES, A. W., M. D., New Orleans.
 DICKEY, JOHN L., M. D., Wheeling, W. Va.

DUKE, E. T., M. D., Cumberland, Md.
 DUKEMAN, WILLIAM H., M. D., Los Angeles, Cal.
 DULLES, CHARLES W., M. D., Philadelphia.
 DUNN, JOHN, M. D., Richmond, Va.
 ECCLES, ROBERT G., M. D., Brooklyn.
 EDLEN, E. A., M. D., Moline, Ill.
 EINHORN, MAX, M. D.
 ELIOT, ELLSWORTH, M. D.
 ELIOT, GUSTAVUS, M. D., New Haven.
 ELSNER, HENRY L., M. D., Syracuse, N. Y.
 ESKRIDGE, J. T., M. D., Denver, Col.
 FELD, CARL R., M. D., Watertown, Wis.
 FLINT, AUSTIN, M. D.
 FOSTER, BURNSIDE, M. D., St. Paul, Minn.
 *FOSTER, FRANK P., M. D.
 *FOSTER, MATTHIAS L., M. D.
 FRANCIS, R. P., M. D., Montclair, N. J.
 FRANKHAUSER, F. W., M. D., Reading, Pa.
 FRENCH, THOMAS R., M. D., Brooklyn.
 FULLERTON, ERSKINE B., M. D., Columbus, Ohio.
 GLASGOW, WILLIAM C., M. D., St. Louis.
 GLEITSMANN, J. W., M. D.
 GNICHTEL, A. L., M. D.
 GOMEZ, VINCENT, M. D., Brooklyn.
 GOODMAN, S. M. D., Boston.
 GOULEY, JOHN W. S., M. D.
 *GRANGER, REED B., M. D., Brooklyn.
 GRAY, ROLLIN B., M. D.
 *GRIFFIN, HENRY A., M. D.
 HALLETT, J. B., M. D., Middletown, N. Y.
 HAMILTON, W. D., M. D., Columbus, Ohio.
 HAMMOND, WILLIAM A., M. D., LL. D., Washington, D. C.
 HARRIS, ROBERT P., M. D., Philadelphia.
 HARVEY, P. F., M. D., U. S. Army.
 HARVIE, JOHN B., M. D., Troy, N. Y.
 HAWLEY, HIRAM B., M. D., Syracuse, N. Y.
 HAYNES, IRVING S., M. D.
 HERRICK, J. F., M. D., Ottumwa, Iowa.
 HOLMES, L. BAYARD, M. D., Chicago.
 HOSAN, GEORGE, M. D., St. Louis.
 HUDSON, THOMSON JAY, Washington.
 HRDLICKA, ALIX, M. D.
 HUPP, FRANK LE MOYNE, M. D., Welling, W. Va.
 ILLOWAY, H. M. D.
 INGALS, E. FLETCHER, M. D., Chicago.
 IRVINE, J. SINKLER, M. D., Evinston, Va.
 *JACKSON, FRANK W., M. D.
 JACOBI, A., M. D.
 JAMES, W. S. M. D., Cleveland, Ohio.
 JELLIFFE, SMITH ELY, M. D., Brooklyn.
 JEWETT, CHARLES, M. D., Brooklyn.
 JUDY, C. S., M. D., Miamisburg, Ohio.
 KALISH, RICHARD, M. D.
 KEEFE, DANIEL E., M. D., Springfield, Mass.
 KEENER, W. N., M. D., Jamesport, Mo.
 KEILLER, WILLIAM, F. R. C. S., Edinburgh.
 KEIRLE, N. G., M. D., Baltimore.

KELSEY, CHARLES B., M. D.
 KING, HERBERT MAXON, M. D., Grand Rapids, Mich.
 KNIGHT, CHARLES H., M. D.
 KNIGHT, FREDERICK I., M. D., Boston.
 KOHL, J., M. D., Belleville, Ill.
 KUYK, D. A., M. D., Richmond, Va.
 LAWRENCE, H. NEWMAN, M. D., M. I. E. E.
 LEIPZIGER, H. A., M. D., Burlington, Iowa.
 LILIENTHAL, HOWARD, M. D.
 LINDLEY, WALTER, M. D., Los Angeles, Cal.
 LOCKWOOD, CHARLES E., M. D.
 LOVETT, ROBERT W., M. D., Boston.
 LOWREY, J. B., M. D., Neola, Iowa.
 LYMAN, C. B., M. D., Denver, Col.
 MacINTOSH, W. PAGE, M. D., U. S. Marine-Hospital Service.
 MACKENZIE, JOHN N., M. D., Baltimore.
 MAHER, STEPHEN J., M. D., New Haven.
 MANGES, MORRIS, M. D.
 MARCY, W. H., M. D., Buffalo.
 MATTSON, CHARLES R., M. D., Philadelphia.
 McGILLICUDDY, T. J., M. D.
 McKINLOCK, JOHN, M. D., Chicago.
 *McLAREN, DICE, Newark, N. J.
 MILLER, IRVING, M. D., Baltimore.
 MILLS, OGDEN.
 MINOR, JAMES L., M. D., Memphis, Tenn.
 MITCHELL, A. T., M. D.
 MORRIS, STUYVESANT F., M. D.
 MORTON, THOMAS K., M. D., Philadelphia.
 MOSER, WILLIAM, M. D., Brooklyn.
 MUNCASTER, MAGRUDER, Ph. D., M. D., Washington.
 MUND, CARL, M. D.
 NAMMACK, CHARLES E., M. D.
 NASON, F. T., M. D., McKeesport, Pa.
 NILES, MARY W., M. D., Canton, China.
 NORTHROP, WILLIAM P., M. D.
 O'CONNELL, JOSEPH, M. D.
 OLIVER, CHARLES A., M. D., Philadelphia.
 O'MALLEY, AUSTIN, Ph. D., M. D., Washington.
 OPPENHEIM, NATHAN, M. D.
 OSLER, WILLIAM, M. D., Baltimore.
 OVERLOCK, S. BURDEN, M. D., Pomfret, Conn.
 *PETERSON, FREDERICK, M. D.
 PETERSON, REUBEN, M. D., Grand Rapids, Mich.
 PETTUS, W. J., M. D., Buffalo.
 PHELPS, A. M., M. D.
 PHELPS, CHARLES, M. D.
 PICK, ALBERT, M. D., Boston.
 PRESTON, GEORGE J., M. D., Baltimore.
 PRUDDEN, T. MITCHELL, M. D.
 PRYOR, WILLIAM R., M. D.
 RAMBO, C. M., M. D., Zanesville, Ohio.
 RAND, H. W., M. D., Brooklyn.
 RANNEY, AMBROSE L., M. D.
 RECTOR, JOSEPH M., M. D.
 REED, CHARLES A. L., M. D., Cincinnati.

REICH, A., M. D.
 REIS, I. J., M. D., Chicago.
 RHODES, C. ALEXANDER, M. D.
 RICE, CLARENCE C., M. D.
 ROBINSON, BEVERLEY, M. D.
 *ROBINSON, CHARLES H., F. R. C.
 S. I., Dublin, Ireland.
 ROCKWELL, A. D., M. D.
 ROOT, ELIZA H., M. D., Chicago.
 *ROOSEVELT, J. WEST, M. D.
 ROSE, ACHILLES, M. D.
 RUHRÄH, JOHN, M. D., Baltimore.
 RUSSELL, JOHN F., M. D.
 SACHS, B., M. D.
 SELVA, JULIUS, M. D., Boston.
 SEMON, FELIX, M. D., London, Eng.
 *SHAFFER, NEWTON M., M. D.
 SHIELDS, CHARLES M., M. D., Richmond, Va.
 SILK, J. FREDERICK, London.
 SMITH, ALLEN J., M. D., Galveston, Texas.
 SMITH, D. J., Jr., M. D., Elizabethtown, Tenn.
 SMITH, E. B., M. D., Detroit.
 SMITH, ERNEST ELLSWORTH.
 SMITH, FRANK TRESTOR, M. D., Chattanooga, Tenn.
 SMITH, S. MACCUEEN, M. D., Philadelphia.
 SMITH, THEOBALD, M. D., Washington.
 SMITH, W. HARVEY, M. D.

SOLIS-COHEN, SOLOMON, M. D., Philadelphia.
 STEINBACH, L. W., M. D., Philadelphia.
 STEPHENSON, F. B., M. D., U. S. Navy.
 STEVENS, M. E., M. D., Texarkana, Texas.
 SUTTON, R. STANSBURY, M. D., Allegheny, Pa.
 SWAIN, H. L., M. D., New Haven.
 TALMEY, B. S., M. D.
 TAYLOR, HENRY LING, M. D.
 TERRELL, E. B., M. D., Greenville, Ga.
 TOMS, S. W. S., M. D., Ph. G., Bellport, L. I.
 TOWNSEND, W. R., M. D.
 *TUTTLE, JAMES P., M. D.
 TYLER, LACHLAN, M. D.
 TYNDALE, J. H., M. D., Lincoln, Neb.
 VALK, FRANCIS, M. D.
 *VINEBERG, HIRAM N., M. D.
 VON RUCK, KARL, M. D., Asheville, N. C.
 VULPIUS, WALTHER, M. D.
 WAGNER, H. L., M. D., San Francisco.
 WALDSTEIN, LOUIS, M. D.
 WALKER, MAURICE A., M. D., Denver, Col.
 WARINNER, WILLIAM, M. D., Weston, Mo.
 WATSON, ARTHUR W., M. D., Philadelphia.
 WEAVER, W. H., M. D., Chicago.

WEBER, LEONARD, M. D.
 *WEBSTER, DAVID, M. D.
 WEISSINGER, W. S., M. D., Hernando, Miss.
 WESENER, JOHN A., M. D., Chicago.
 WESSINGER, J. A., M. D., Ann Arbor, Mich.
 WEST, JOHN E., M. D., Jersey City, N. J.
 *WESTBROOK, BENJAMIN F., M. D., Brooklyn.
 WESTGATE, LETITIA A., M. D., Sycamore, Ill.
 WHEELER, JOHN B., M. D., Burlington, Vt.
 WIENER, ALFRED, M. D.
 WIGGIN, FREDERICK HOLME, M. D.
 WIGHT, J. S., M. D., Brooklyn.
 WILBUR, N., M. D., Fayetteville, N. Y.
 WILCOX, REYNOLD W., M. D., Ll. D.
 WILKINS, W. F., M. D., Kansas City, Mo.
 WILLIAMS, U. V., M. D., Frankfort, Ky.
 WOODBURN, FREDERICK, M. D., Indianapolis.
 WOOD, CASEY A., M. D., Chicago.
 WOOD, WILLIAM, & CO.
 WRIGHT, JONATHAN, M. D., Brooklyn.
 WYMAN, HAL C., M. Sc., M. D., Detroit.
 ZIEGLER, S. LEWIS, M. D., Philadelphia.

LIST OF ILLUSTRATIONS IN VOLUME LX.

	PAGE		PAGE
Formation of Cavities in Acute Pulmonary Tuberculosis.		Laryngectomy by a Novel Method. Two Illustrations...	451
Twelve Illustrations..... Facing	1	A Case of Psoriasis in a Child of Two Years and Five Months.....	452
The Beaked Knife.....	30	Hypertrophy of the Nasal Mucous Membrane. Six Illustrations.....	453-455
Subacute Unilateral Bulbar Palsy. Five Illustrations.	35, 36	Chloroform Inhaler.....	457
An Improved Stethoscope.....	59	Exercise in Pulmonary Phthisis. Twenty Illustrations.	Facing 481
Abdominal Tumors. Two Illustrations.....	68, 69	Rectal Syringe.....	494
Abdominal Tumors. Three Illustrations.....	97-100	Glass T-tube.....	514
Myxedema. Two Illustrations.....	102, 103	Vagino-fixation. Seven Illustrations.....	517-520
Distraction in Hip Disease. Twenty-two Illustrations.		Foreign Body in the Larynx. Three Illustrations.....	531
Contribution to Rhinoplastic Surgery. Two Illustrations.		Teaching of Anatomy. Two Illustrations.....	545, 546
	Facing 130	Circoid Aneurysm. Two Illustrations.....	550
The Vaginal Anus. Nine Illustrations.....	166, 167	Epithelioma of the Larynx.....	583
Subtrochanteric Fracture of the Femur.....	169-176	Follicular Odontoma. Two Illustrations.....	614-615
High-tension Coil. Two Illustrations.....	206	Chloroform Apparatus.....	616
Purdy Electric Centrifuge.....	216	Berningham's Nasal Douche.....	622
Colic of the Appendix. Two Illustrations.....	240	Nasal Polypus. Seven Illustrations.....	650-654
External Urethrotome.....	251	Polypus Scissors.....	654
Paralysis Agitans.....	259	Subglottic Myxoma.....	680
Cyst of the Larynx.....	261	Chronic Heart Disease. Nine Tracings.....	706-709
Hypodermic Needle for Laryngeal Injections.....	261	Tubal Pregnancy. Three Illustrations.....	739, 740
A Monstrosity. Two Illustrations.....	263	A New Amygdalotome.....	766
A New Operation for Hernia. Twenty-four Illustrations.....	292-295	A New Conchotome.....	766
The Gastrograph. Three Illustrations.....	322-324	Pus-pan Holder.....	766
An Operating Table. Five Illustrations.....	379	An Instrument for Vibratory Massage of the Nasal Mucous Membrane.....	798
Kraurosis Vulvæ. Seven Illustrations..... Facing	385		
A New Vaginal Douche.....	390		
A Study of Child Growth. Two Charts.....	417, 418		

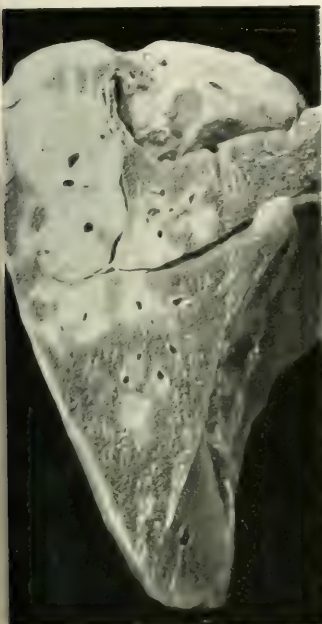


FIG. 1.—Rabbit's lung 12 days after the injection of a broth culture of the tubercle bacillus through the trachea.



FIG. 2.—Rabbit's lung 41 days after the injection of a broth culture of the tubercle bacillus through the trachea.

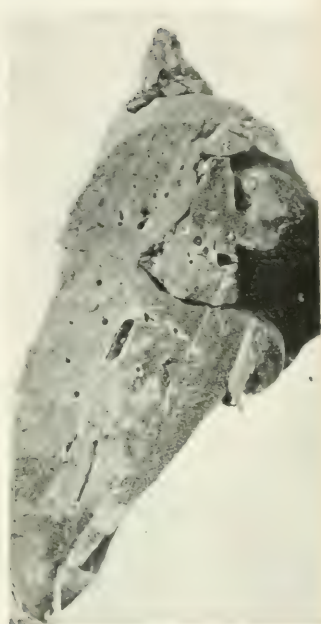


FIG. 3.—Rabbit's lung 11 days after the injection of a broth culture of the tubercle bacillus through the trachea.



FIG. 4.—Rabbit's lung 10 days after the injection of a broth culture of the tubercle bacillus through the trachea. Extensive necrosis.



FIG. 5.—Rabbit's lung 10 days after the injection of a broth culture of the tubercle bacillus through the trachea. Extensive necrosis.



FIG. 6.—Rabbit's lung 10 days after the injection of a broth culture of the tubercle bacillus through the trachea. Extensive necrosis.



FIG. 7.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 28 days by injection of *Streptococcus pyogenes*. Killed after 16 days. Small cavity and areas of consolidation.



FIG. 8.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 23 days by injection of *Streptococcus pyogenes*. Killed after 7 days. Small communicating cavities.

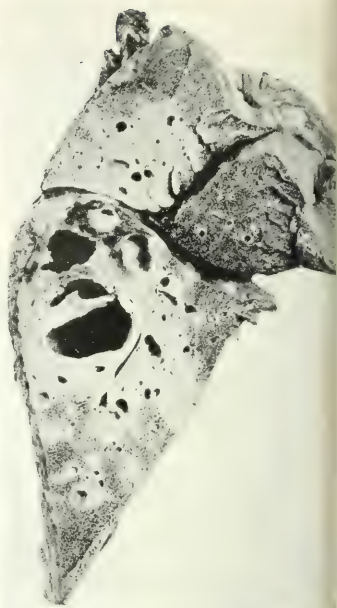


FIG. 9.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 28 days by injection of *Streptococcus pyogenes*. Killed after 7 days. Large and small cavities and areas of consolidation.



FIG. 10.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 28 days by injection of *Streptococcus pyogenes*. Killed after 14 days. Numerous small cavities.

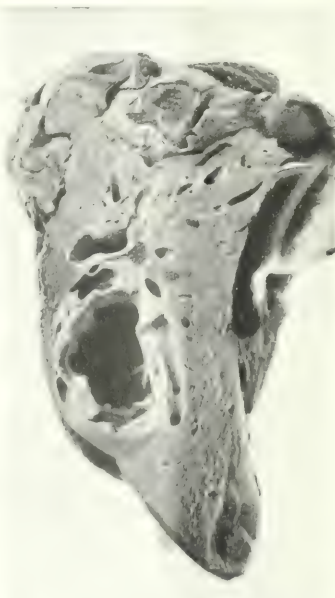


FIG. 11.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 28 days by injection of *Streptococcus pyogenes*. Death after 10 days. Large cavity.



FIG. 12.—Rabbit's lung injected with broth culture of tubercle bacillus, followed after 28 days by injection of *Streptococcus pyogenes*. Death after 4 days. Large cavity with suppuration in the walls.

Original Communications.

CONCURRENT INFECTIONS AND THE
FORMATION OF CAVITIES
IN ACUTE PULMONARY TUBERCULOSIS.
AN EXPERIMENTAL STUDY.

By T. MITCHELL PRUDEN, M. D.,

PROFESSOR OF PATHOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS,
COLUMBIA COLLEGE, NEW YORK.

THE discovery of the tubercle bacillus and the establishment of its causal relationship to tuberculosis at once made possible a readjustment of our knowledge of the tubercular lesions of the lungs. This has led to a great simplification of our conceptions regarding the protean phases, topographical, structural, and clinical, of pulmonary phthisis. In order to make entirely clear the standpoint from which the experiments recorded in this paper were undertaken, it seems necessary to briefly state some fundamental facts about the tubercle bacillus and its mode of dissemination in the lungs.

The living tubercle bacillus, lodged or growing in the body, is capable of producing a series of more or less distinct, but often associated, sets of changes. In the first place, it may cause simple *proliferation of epithelial or connective-tissue cells*. These new cells may collect in larger or smaller masses about the bacilli, or form and gather at some distance from them, and may vary in shape and character with the cells from which they develop and the conditions under which they collect. But they show no tendency to share in the formation of organized tissue.

Or, on the other hand, various kinds of cells under the immediate influence of the tubercle bacillus, or of its diffusible products, may be stimulated to the formation of new organized tissue—that is, a tissue consisting of cells and a new living stroma, in which blood-vessels are not apt to develop. This phase of the action of the tubercle bacillus, associated with the formation of new cells and tissues, may be called *productive inflammation*.

The tubercle bacillus is further capable either of inducing changes in the walls of the smaller blood-vessels in its vicinity, or of attracting leucocytes by chemotaxis, or both, in such a way as to produce the phenomena of an *exudative inflammation*. These exudates may be exactly similar to those induced by several other well-known micro-organisms—namely, serum, fibrin, and pus.

The tubercle bacillus is capable also of serious *interference with local blood supply*, either by inducing an obliterating inflammation of blood-vessels, or by their partial or total closure through new-formed tissue about them.

Furthermore, the tubercle bacillus is capable of inducing in the infarcted tissues in which it has been lodged in the new cells and in the new tissue which have formed under its influence, and in the formed exudates which it has gathered, a peculiar kind of necrosis called *caseation* or *cheese*, or *cheese degeneration*.

Finally, under certain conditions, the tubercle bacillus is capable of inducing a general systemic tuberculosis of

the body at large, which are in the nature of septic intoxications, and which, though without lesions at present demonstrable, may be highly detrimental to the welfare of the affected individual.

Briefly summarized, then, the effects which may be induced in the living body by the tubercle bacillus are cell proliferation, productive and exudative inflammation, local obliteration of blood-vessels, necrosis, and septic intoxication. These effects may all vary within wide limits with the virulence of the infecting germs and the susceptibility of the affected individual.

While it is not yet possible to definitely assign all these various but associated effects of the tubercle bacillus upon the tissues to particular elements in its organization, or to special products in its metabolism, a good start has been made in this direction.

A host of studies on its soluble metabolic products (tuberculin) has shown, at least, that this germ is capable of producing as it grows soluble substances, which readily excite exudative inflammation in vulnerable forms of tissues, and which act as powerful systemic poisons on the human body.

On the other hand, it has been shown* that, after having been killed by prolonged boiling, and freed from soluble material by repeated washings, the dead bodies of the tubercle bacilli are, when introduced into various parts of the bodies of animals—lung, liver, kidney, etc.—not only markedly pyogenic, but are also capable of stimulating the tissue cells of the part in which they lodge to a production of new cell masses and tissues similar in structure to many of those produced by the living germs.† Some substance or substances, then, contained in the dead bodies of the tubercle bacilli are capable of inducing in the body both exudative and productive inflammation.

Let us now turn to the special effects which the tubercle bacillus may produce in the lungs. It is well known that there are three distinct ways in which the tubercle bacillus may become distributed in the lungs, and that the differences in the topographical as well as the minute structural features of the lesions in different cases of pulmonary tuberculosis are in large measure dependent upon

* P. Ehrlich and H. H. Berg, *Archiv. f. Prot. u. Path. Anat.*, 1894, p. 189.

† The effects of the bodies of dead tubercle bacilli upon the tissue cells of the lungs, and upon the formation of new cells and tissues, have been studied by Berg and Ehrlich (loc. cit.) and by Berg and Ehrlich (loc. cit.). The results of their experiments are as follows: The bodies of dead tubercle bacilli, when introduced into the lungs of guinea-pigs, induce a productive inflammation, which is characterized by the formation of new cell masses and tissues, and by the formation of new blood-vessels. The new cell masses and tissues are similar in structure to those produced by the living germs. The new blood-vessels are also similar to those produced by the living germs. The results of their experiments are as follows: The bodies of dead tubercle bacilli, when introduced into the lungs of guinea-pigs, induce a productive inflammation, which is characterized by the formation of new cell masses and tissues, and by the formation of new blood-vessels. The new cell masses and tissues are similar in structure to those produced by the living germs. The new blood-vessels are also similar to those produced by the living germs.

these modes of distribution. The three ways in which tubercle bacilli may be disseminated in the lungs are: (1) through the blood-vessels; (2) through the lymphatics; (3) through the respiratory passages.

When the distribution of the tubercle bacilli occurs through the blood-vessels alone by *metastasis* from some primary focus of tubercular inflammation, the resulting lesions are usually in the form of the small discrete masses of new-formed cells and tissue which are called miliary tubercles. Similar results may follow the distribution of the bacilli through the lymphatics. These results of the metastatic distribution of tubercle bacilli through the lungs may occur as the sole form of the tubercular lesions, and the tubercles may become larger and coalesce or form fresh foci of infection; or miliary tubercles, incited in the same way by the dissemination of the bacilli through the blood or lymph vessels, may occur in connection with other phases of pulmonary tuberculosis.

The third way of distribution of the tubercle bacilli through the lungs is through the respiratory passages from some primary focus of tubercular inflammation which by ulceration or otherwise can discharge bacilli into them. This is distribution by *aspiration*, and this it is which is the dominant factor in many cases of acute phthisis in which large and often widely distributed areas of pulmonary consolidation occur, sometimes with and sometimes without marked tendency to disintegration of tissue and the formation of cavities.

A large part of the cases of acute pulmonary tuberculosis which are called cheesy pneumonia, lobular and lobar phthisis, pneumonic phthisis, etc., are clearly due to the distribution through the lungs by aspiration of material containing tubercle bacilli. This material in many cases comes from old and often small cavities at or near the apex. These cases of so-called acute phthisis are actually tubercular broncho-pneumonia, either lobular or lobar. But the distribution of tubercle bacilli through the respiratory passages may be so slight or so scattered as to give rise to very small foci of tubercular broncho-pneumonia, and these small foci form one of the structural varieties of miliary tubercle.

Before the discovery of the tubercle bacillus, the morphological study of pulmonary tuberculosis led to arbitrary classification of the tubercular groups merging into one another, and varying in their character and limitations with the point of view and experience of each observer. On the whole, it may be said that, until then, the marked tendency to cheesy degeneration and the formation of cavities, which is so often evident, two main sets of lesions are dominant in acute pulmonary tuberculosis. These are organized collections of tubercle bacilli in the form of miliary tubercles or larger foci of pneumonia, and secondary cavitation in the air spaces of the lungs, either fairly distinct or cellular, presenting the general appearance of such cavities produced in lung tissue from any cause.

The experimental studies of the tubercle bacillus, and the knowledge of the general course of natural and artificial disease, that the tubercle bacillus can live and multiply for months in the form of the dry, granular mass which is sometimes found in certain lesions in chronic dis-

generation we are wont to call tubercular, but also that it may to a certain extent at least be responsible for a simple exudative pneumonia in no wise morphologically characteristic, and for a large proliferation of vesicular epithelium.

To Baumgarten* belongs the credit of having definitely established the essential unity of all the tubercular processes in the lungs. He proved by an extended study of human lesions, and by a most convincing series of animal experiments, that between the metastatic miliary tubercles of the lungs, with their definite outlines, typical size, shape, and distribution, with their unmistakable stamp of productive inflammation on the one hand, and the more diffuse and extensive lesions having the character of exudative inflammation and commonly called cheesy pneumonia, acute phthisis, etc., on the other, there was no fundamental distinction, but there were only quantitative differences.

The great complexity which so often marks the lesions of acute pulmonary phthisis, giving an almost infinite variety to the appearances which they present, and rendering the study of phases and combinations and varieties of lesions an almost endless one, is due to the several factors which we have thus briefly reviewed—namely, (1) the different though associated effects which the tubercle bacillus and its products may have upon the lungs and upon the body at large; (2) the differences in distribution of the bacilli, whether through the blood or lymph channels, or by aspiration through the air spaces; (3) the differences in susceptibility of the affected individuals and the grade of virulence of the particular growth of tubercle bacilli at work; (4) the association in varying ways and proportions with phases of inflammation other than tubercular; (5) the varying involvement of blood-vessels. Each of these factors in all their phases must be the subject of detailed studies before we shall obtain an accurate and exhaustive knowledge of this disease. The two complicating factors in acute pulmonary tuberculosis which are to be especially considered in this paper are the *exudative pneumonia* and the *formation of cavities*.

As our knowledge of the aetiology of the various phases of exudative pneumonia has developed, and we have learned definitely to associate them, some with the *Micrococcus lanceolatus*, some with the streptococcus or the *Staphylococcus pyogenes*, or with other less common forms of germs, the question has presented itself with increasing urgency whether, after all, the exudative pneumonia so often present in pulmonary phthisis, especially in its acute forms, may not be due in many cases to the association with the tubercle bacilli of other kinds of germs. If this were so, would it not be possible more clearly to understand and classify the lesions of pulmonary tuberculosis, and to explain and perhaps influence in a beneficial way its clinical course?

Recent careful observation and experiments of others. The first systematic studies with the new technique on the bacterial content of cavities in pulmonary phthisis showed that the tubercle bacillus is not the sole inhabitant of such cavities, and the possible influence of the

* Baumgarten, *Beitrag zur Histologie*, 1889.

other germs on the course of the disease was early suggested. Later studies, growing more frequent and precise as their significance became more clear, have already furnished us with data which can no longer be ignored either by the student of the lesions and the causes of pulmonary tuberculosis or by the practitioner of medicine. So far as the presence and action, and in large degree the significance of the tubercle bacillus is concerned, our large stores of knowledge remain essentially unchanged. But we must now prepare ourselves, as it would seem, to look with keener attention to the complicating factors in pulmonary tuberculosis which, the at least frequent presence of other pathogenic germs brings into play. It is not necessary for our purpose here to give an account of the early observations made on the presence of bacteria other than the tubercle bacilli in the lungs in pulmonary tuberculosis, or to consider the bacterial flora of the air-passages in general.* We shall only notice briefly those recent observations bearing on this subject which appear most full and significant.

In 1888, Babes † recorded his observations on tubercular lesions of various kinds in fifty-two children. In forty-two of these tubercular lesions he found other bacteria associated with the tubercle bacillus. The most common associated germ was the *Streptococcus pyogenes*, though the *Micrococcus lanceolatus* and others were found. He often found the pyogenic bacteria associated with the tubercle bacillus in tubercular lymph-nodes in the mediastinum. While the tubercle bacillus was confined to the seat of tubercular lesion, the pyogenic bacteria often had a wide distribution in the body. His observations led him to believe that localized tuberculosis in children often becomes active and serious under the influence of the pyogenic microbes, which as he conjectures may either directly modify the action of the tubercle bacillus, or open the way for its distribution in the body.

Again, in 1891, Babes reports his observations in adults bearing on this theme. It seemed to him that the association of other germs with the tubercle bacillus was perhaps less frequent in adults than in children. But in adults the *Staphylococcus pyomycetum aureus* and a streptococcus were found with the tubercle bacillus in the cavities in pulmonary tuberculosis. Bacilli and the pyogenic cocci may, he thinks, enter the lymphatics from cavities, and pass to the adjacent lymph nodes. In nearly all tubercular lungs, he finds *Mycobacterium leucituberculi* and *Streptococcus pyomycetum*. In tubercular lymph nodes in other parts of the body, the frequent association with the tubercle bacillus of other microbes, especially the pyogenic, is increased. At tubercular tubercles bacilli not capable of causing infection in healthy rabbits may, according to Babes, induce tubercular lesions in animals already the victims of suppurating foci. On the other hand, he has found that animals in which

tuberculin was administered were susceptible to the streptococci, pneumococcus, and certain bacilli which had lost their virulence for healthy animals. In rabbits having chronic tuberculosis an injection of streptococci, innocuous to healthy animals, would cause a rapid extension of the tubercular process. While these studies of Babes are recorded without detail by which we might judge of the justice of his conclusions, they not only show that the tubercle bacillus is frequently associated in the body with other pathogenic forms, especially with the pneumococcus, streptococcus, and staphylococcus, but also indicate that their association may have an important effect on the action of each upon the body of their host.

Up to 1892, the bacterial study of the sputum, except so far as the tubercle bacillus is concerned, had thrown little light upon the forms and significance of bacteria in the deeper air-passages and cavities, because the contamination of the material in expulsion through the upper air-passages and mouth was necessarily so great. But now Kitasato,* following a technical suggestion of Koch, found that by repeatedly washing in distilled water the more solid portions of sputum which had originated in cavities or the deeper air-passages, a material could be obtained which could be fairly considered as a representative exudate from the deeper sources in the lungs. Kitasato found that in such washed material from deep regions of the lungs in tuberculosis, the tubercle bacillus was frequently associated with other forms of germs, which in some cases were so abundant and so widely distributed through the body as to justify the conjecture that they must share in producing the phenomena of the disease. Kitasato especially notes the abundance of three forms of bacilli, two different streptococci, and three cocci. But further details fail, as he passed the theme on to Cornet.

Cornet† also gives little detail; but in twenty cases of pulmonary tuberculosis studied, in addition to the tubercle bacillus, in twelve cases streptococcus was most abundant; in two, a non-mobile bacillus; in two, *Bacillus pyocyaneus*. In most cases, *Staphylococcus pyogenes aureus* was present; in some it was the dominant form. In two cases, the streptococcus was found as a secondary during an attack of fever, disappearing as the temperature fell.

In 1962, O'Brien¹ reported that the histopathological picture of cases presenting with a mass lesion of the lung is similar to that of the lesion associated with tuberculosis. Cultures and morphological examinations were systematically made. His results indicated that as many as 10% of the cases in the study (30 cases) belonged to the group of tuberculous nature. The confirmation of the fact, with limited or limited information, in which the sample population group is limited to 200 patients, is a limited pathological picture. Mr. O'Brien's study was published in the *Journal of Clinical Microbiology*, 1962, Vol. 1, No. 1, pp. 1-10.

[illegible]

© 1999 Blackwell Science Ltd, *Journal of Internal Medicine* 245: 369–375

⁸ *Journal of American Studies*, 32 (1998), xi, p. 441.

micrococci were found in fifteen. In one case of acute lobar pneumonia accompanying pulmonary tuberculosis, and in four out of five cases of so-called cheesy lobar pneumonia, identical pathogenic micrococci were found. In fifteen cases of chronic tuberculosis without gross evidence of associated pneumonia, the same cocci were found in five. Finally, the same germs (*Micrococcus lanceolatus*, streptococcus, or forms closely allied to these) were found in eight out of nine cases of acute and subacute miliary tuberculosis. In many of the above examinations the *Staphylococcus pyogenes aureus* or albus was present in moderate numbers, but the streptococcus or pneumococcus forms were always preponderant and present in great numbers. The presence of the tubercle bacillus was established in a considerable proportion of the cases. Ortner concludes that in lungs affected with tuberculosis, one must recognize two pathological processes—that which leads to the formation of tubercle, and that which induces the pneumonic processes. These differ both histologically and etiologically. The tubercles are caused by the tubercle bacillus; the more diffuse pneumonic processes are due to the activity of the pathogenic cocci.

Klein* examined bacteriologically inflamed portions of the body of tuberculous persons who had shown a reaction when treated with tuberculin shortly before death. He examined pneumonic areas in the lungs near tubercular foci (ten cases); contents of cavities (four cases); pus from various sources (three cases); fibrinous exudate in pleura (two cases); tissue of spleen and kidney (each one case). In all these tissues and exudates he found pathogenic cocci, which he does not clearly differentiate from *Streptococcus pyogenes* and *Micrococcus lanceolatus*, but to which at least they are closely related. The constant association in his cases of these pathogenic cocci with those inflammatory processes which under the name of "reaction" the administration of tuberculin seemed to accentuate, led Klein to investigate experimentally the effects of tuberculin on inflammatory lesions produced in non-tubercular animals by inoculation with streptococci from various sources. He finds as the result of thirteen experiments on rabbits that tuberculin in small doses has the effect of intensifying in marked degree the inflammatory processes lighted up by streptococci. He gives the story of two cases of erysipelas in man in which the inflammatory process was greatly intensified by the administration of tuberculin. The inference which these observations suggested—namely, that certain products of the growth of the tubercle bacillus may have some pronounced effect upon the inflammatory processes of certain pathogenic cocci, led to some further experiments. He will not discuss differences in regard to the growth of streptococci in fluid and in gelatin, and in meat broth, gelatin, and small quantities of casein milk had been added. This result is in line with that of others who found that *Streptococcus pyogenes* and *Diphtheria* germs would not grow with streptococci in media in which the tubercle bacillus had grown. In two experiments Klein found that he had found the stimulus of the

streptococcus to be markedly increased by its growth on tuberculinized culture media. But his cultures and animal experiments were far too meager to permit of definite conclusions.

Petrushky* has examined at the Institute for Infectious Diseases at Berlin, the sputum of persons with pulmonary tuberculosis—both those with and those without fever—with reference to its bacterial contents, and also the viscera of those dead of pulmonary tuberculosis. Streptococci were of most frequent occurrence, not only in the sputum, but in eight out of fourteen cases were found in the blood and all the viscera. The details of his studies are not yet published, but he is led to regard the streptococcus invasion as a serious complicating factor in phthisis, probably bearing an intimate relationship to the " hectic fever." Petruschky recognizes the difficulty of distinguishing between species or varieties in the streptococci which are so often found in acute inflammatory conditions. But he finds the streptococci cultivated from the sputum and organs of phthisis cases, on the whole, less virulent than those from erysipelas and the ordinary septic cases.

The studies of Nannotti,† though not directly concerning the lungs, have an important bearing on our theme. He observed a favorable change in a tubercular inflammation of the knee joint after the spontaneous occurrence of erysipelas, and was led to undertake a series of experiments on the assumed antagonism between tuberculosis and erysipelas. Rabbits and guinea-pigs with artificially induced tuberculosis were treated by inoculation of pure cultures of the streptococcus, or by injection of its filtered and sterile metabolic products. Experiments in the way of preventive inoculations, before tubercularization, with living streptococcus or injections of its sterile filtered products were made. Finally, the effect upon the tubercular process of the induction of a simultaneous chemical inflammation with croton oil was studied. Under the influence of the artificially induced streptococcus inflammation, the tubercular process was markedly modified. Tubercular abscesses grew smaller and the tubercular fistule might heal. But the tubercular process was not hindered from generalization in the common way by these local interferences, nor was the virulence of the tubercle bacilli which remained in the walls of the abscess diminished. Moreover, the inflammatory process induced with croton oil manifested a favorable local influence on the tubercular process not less marked than that caused by the streptococcus.

The experimenter thinks that the favorable effect of the erysipelas on the tubercular inflammation may be due to the leucocytosis induced by the former, which contributes to the destruction of the fungous granulations by suppuration, and that the supervening cicatricial tissue forms a temporary isolating resting place for the tubercle bacilli, which are thus for a time kept under conditions unfavorable to their proliferation and dissemination. No evidence

* Peterschky. *Tuberculosis und Streptococcus*. *Deutsche Med. Wochenschr.*, No. 44, April 9, 1903.

† Nannotti. *La fistola del ginocchio*. *Riv. Ch. e Med.*, 2, No. 3, 1893, p. 399.

* Klein. *Untersuchungen über die Wirkung des Tuberkulins*. Berlin, 1902.

of a specific antagonism between the streptococcus and the tubercle bacillus appears from these studies.

Jakowski examined* by culture the blood in nine cases of pulmonary tuberculosis in the hectic period, and in seven of the cases found the pyogenic bacteria. The *Staphylococcus pyogenes aureus* was present in five of the cases—twice alone, twice with albus, and once with streptococcus. *Streptococcus pyogenes* was present in three cases—twice alone and once with *Staphylococcus pyogenes aureus*.

Fraenkel and Troje,† on the other hand, have shown in their most careful and interesting work on the *Pneumonic Form of Acute Pulmonary Tuberculosis* that in this form of disease in which the exudative is apt to so largely predominate over the productive lesion, the tubercle bacillus alone was present in the lungs in eleven out of twelve cases; in the remaining case streptococci were present in large numbers. The earlier experiments of Baumgarten on the production of varying phases of tubercular broncho-pneumonia in the rabbit by the tracheal injection of tubercle bacilli were repeated with confirmatory results.

These observers call especial attention to the fact that while both in man and the rabbit cheesy degeneration is associated with the local growth and development of the tubercle bacilli, large areas of epithelial cell proliferations and exudative inflammation may develop at some distance from the seat of lodgment or growth of the tubercle bacilli, and are apparently due to the action of a soluble diffusible poison developed by the germ.

According to Fraenkel and Troje the morphological differences between the so-called cheesy pneumonia, which is a tubercular broncho-pneumonia, and the organized tissue structures known as tubercles is primarily due to the fact that while the tubercles are developed in the interalveolar structures of the lungs to which the bacilli are brought by the blood or lymph vessels, largely free from intermingled poisonous substances, the infection by aspiration is intra-alveolar and the bacilli are accompanied by greater or less quantities of diffusible poisonous material developed at their original seat. Thus, while in the vicinity of metastatic tubercles, miliary or otherwise, the metabolic products of the growth of the tubercle bacillus gradually produced may incite exudation and cell proliferation beyond the limits of the focus of productive inflammation, this is not and can not be so extensive and quickly developed as under conditions which involve the sudden accession to the air spaces of the lungs, not only of tubercle bacilli, but of greater or less quantities of already elaborated poison, as is the case in the tubercular broncho-pneumonia of acute phthisis meted by aspiration.

This interesting hypothesis finds additional support in the experimental results of the writer's studies presently to be recorded.

It would appear, then, that the evidence thus far gathered indicates the frequency and importance of some concurrent infection in tubercular pneumonia as a complicating

factor in pulmonary tuberculosis, and that *Streptococcus pyogenes*, *Micrococcus lanceolatus*, and *Staphylococcus pyogenes* are the secondary germs frequently present. But however frequently pyogenic or other bacteria may prove to be associated with the tubercle bacillus in the lesions of pulmonary tuberculosis, it is not just to assume that all or even a large part of the exudative inflammation and cell proliferation which we find in tubercular lungs is necessarily due to the action of secondary or complicating bacterial invaders; because the experimental studies of Baumgarten,* Fraenkel and Troje,† the writer, and others have shown that it is possible to cause in rabbits a typical tubercular broncho-pneumonia with large consolidation and cheesy degeneration and with much fibrinous and cellular exudate by the injection into the lungs through the trachea of a pure culture of the tubercle bacillus. Furthermore, in many cases of tubercular broncho-pneumonia in the human subject the tubercle bacillus is alone demonstrable in the consolidated areas, as is shown especially by the examinations of Fraenkel and Troje.‡

It is most important, not only for a proper conception of the complex nature of pulmonary tuberculosis as a pathological process, but also from the standpoint of prophylaxis and treatment, that more light should be thrown upon the question of secondary infection in this disease. Evidently far more extended bacterial studies will have to be made of blood, sputum, and the lungs themselves in cases of pulmonary tuberculosis before the whole significance and bearing of the subject will be plain. In the meantime it has seemed to the writer that a series of experimental studies on the effect of association of the tubercle bacillus and its products with other germs frequently found with it in the lungs in phthisis, as shown both in cultures and in animals, would be useful in controlling the studies of the bedside and the autopsy room. The studies recorded in this paper concern the relationships, as above indicated, of the tubercle bacillus and the *Streptococcus pyogenes*.

EXPERIMENTAL STUDIES OF THE WRITER.—A set of preliminary experiments was made with the purpose of determining the effect on each other, in cultures under varying conditions, of the tubercle bacillus and the *Streptococcus pyogenes*, and of their metabolic products.

It does not seem necessary to give the details of these culture experiments, but only their general results, which may be summarized as follows: When the tubercle bacillus and the *Streptococcus pyogenes* are planted together in glycerinated (five per cent.) beef broth, the streptococcus grows as abundantly as in separate control cultures, while the tubercle bacillus does not grow at all. On the pyogenized broth, in which the streptococci had grown for five days, just what was produced usually by placing therein pure culture of the tubercle bacillus failed altogether to grow, either when the sterilized broth was used in its full strength, or when diluted to various degrees down to one hundredth of its original strength with fresh glycerinated broth. The same results

* Baumgarten, *Journal of Pathology and Bacteriology*, 1892, p. 10.

† Fraenkel and Troje, *Deutsche Medizinische Wochenschrift*, 1893, No. 4, p. 10.

‡ Fraenkel and Troje, *Annals of the New York Academy of Medicine*, 1893, p. 10.

* Baumgarten, *Journal of Pathology and Bacteriology*, 1892, p. 10.

† Fraenkel and Troje, *Deutsche Medizinische Wochenschrift*, 1893, No. 4, p. 10.

‡ Fraenkel and Troje, *Annals of the New York Academy of Medicine*, 1893, p. 10.

mental control of the quality of the lesion, it may be said, in general, that when very large amounts of the tubercle bacillus are introduced, the early phases of the resulting lesion are apt to be dominated by the occurrence, in addition to the local cell proliferation and productive inflammation and cheesy degeneration, of an exudative inflammation especially characterized by the accumulation in the air spaces of fibrin and leucocytes or lymphocytes.

The experiments of this set, whose results are now to be summarized, were done on sixteen rabbits, varying quantities of the culture of the tubercle bacillus being introduced. In eleven out of these sixteen animals the amount and distribution of the tubercle bacillus were such that considerable masses of consolidation in the lungs occurred—masses ranging from a cubic centimetre up to those involving whole lobes (Figs. 1, 2, and 3). Of the whole number of animals, two died on the third day, one on the fourth, two on the sixth, one each on the seventh, eighth, and twenty-fourth days. The remaining animals were killed as follows: One each on the twelfth and twenty-ninth day; three on the thirty-sixth day; two on the forty-first day. The five animals presenting only small foci of solidification were those which died or were killed on the sixth, seventh, and thirty-sixth (two) days after the injection. In order to diminish the chance of experimental and inferential errors, these animal experiments were done in three separate groups at different times, the rabbits being secured from different sources. The cultures of the tubercle bacillus were different in each of the three groups.

The result of the lodgment in the air spaces of the lungs of small scattered masses or cultures of tubercle bacilli is the intra-alveolar proliferation of epithelial cells, among which are intermingled varying numbers of leucocytes. After the development of these cell masses, which may occur within a few hours, they may remain with little apparent change, or become more or less infiltrated with leucocytes, or may become cheesy, or may be surrounded by a dense zone of small spheroidal cells. They show, as a rule, no tendency to the disintegration of the cheesy centers up to the forty-first day, beyond which time I have not studied them.

When large bronchi or masses of the tubercle bacilli are introduced into the lungs, the first effect upon the organs is the collection about the germs in the air spaces where they have lodged of dense masses of leucocytes and lymphocytes. These cell collections immediately about the germs form the center of the inflammatory foci which develop later. These larger or smaller masses of small spheroidal cells increase in number and area of consolidation corresponding to the smaller bronchi and series of connecting air spaces in which the bacilli have lodged. They may be scattered groups, through the lung or may be distributed and associated in lines, parallel to the affected bronchi, or they may be packed one part of lobe or whole lobe near or near the surface, appear thickly lined with large and smaller irregularly shaped white solid patches. The walls of these cell filled air spaces may be pushed by the centers and may be cheesy centers. The condition is associated with varying degrees of the inflammatory reaction in the intra-alveolar

masses of small cells and tubercle bacilli are intensely congested, and within forty-eight hours a varying considerable proliferation of alveolar epithelium has occurred in the zone of air spaces surrounding the primary foci. Giant cells may form in the air spaces, apparently by the fusion of the new-formed epithelial cells. The changes of a productive inflammation may begin in the walls of the air spaces about the primary small-celled foci as early as the third day. The smaller bronchi belonging to the involved air spaces may be also densely packed with small spheroidal cells. Within the first three days, if the amount of injected tubercle bacilli be large, the air spaces about the involved areas may be the seat of an exudative inflammation, so that they are closely filled with fibrin and leucocytes as well as exfoliated and proliferated epithelium.

Almost as soon as they have collected, a large portion of the leucocytes and lymphocytes in the immediate vicinity of the clusters of tubercle bacilli may die. Their bodies become granular and disintegrate, while their nuclei maintain their forms and power to take the hematoxylin stain. Thus it comes about that usually within three days of the introduction of the tubercle bacilli the small spheroidal cell masses which first gather about them are converted into densely packed masses of cell detritus in which lie the still perfectly shaped and readily stained nuclei. This change is not in my opinion properly to be called coagulation necrosis, or cheesy degeneration, but is rather a simple necrosis and disintegration of the cell bodies. Cheesy degeneration may follow later with the disappearance of the nuclei and the conversion of the cell structures into a homogeneous or finely granular material in which cell outlines and structures of all kinds are lost.* The tubercle bacilli are largely, if not entirely, confined to the dense central cell masses, so that both the epithelial cell proliferation and the exudative inflammation appear to result from some soluble product of the tubercle bacillus which may diffuse widely from the point of lodgment of the germs, as has been suggested by Fraenkel and Troje. The endothelium of both large and small blood-vessels may be at this time swollen and proliferated.

As time passes the naked-eye distinction is maintained between a larger or smaller irregular-shaped central white area of consolidation and the seat of lodgment of the injected bacilli and a surrounding more translucent zone of solid lung, which contains, as a rule, very few tubercle bacilli. The central mass of necrotic cells and lung tissue may gradually undergo coagulation necrosis, and may increase in size by encroachment on the surrounding zone of consolidation. For many days, however, the cellular character of the central zone may be maintained, and leucocytes, often in large numbers, may invade it from the borders. At a distance from the central zone, however, the

* A part of the material on which this paper is based was published in the *Journal of the American Medical Association*, Chicago, Ill., June 1, 1894, under the title "On the Pathology of Tuberculosis in the Rabbit." The present paper is a more complete and detailed account of the same work, and includes many new observations and conclusions. The material was first published in the *Journal of the American Medical Association*, Chicago, Ill., June 1, 1894, under the title "On the Pathology of Tuberculosis in the Rabbit." The present paper is a more complete and detailed account of the same work, and includes many new observations and conclusions.

consolidation grows wider and is characterized especially by air spaces filled with the new-formed epithelium, or by fibrin and leucocytes, or both, with congestion of the blood-vessels in the walls of the air spaces, or by the obliteration of the blood-vessels from an interstitial growth of new tissue. Giant cells are often abundant in this zone. In air spaces cut off from their neighbors by the new-formed interstitial tissue, the epithelium reverts to the embryonal type and lines the isolated spaces with cuboidal cells. Tubercle bacilli can in my experience rarely be found in these translucent zones of productive inflammation.

The changes thus far indicated are such as may occur within the first two weeks after the injection of the bacilli. From this time on up to the seventh week the changes are quantitative rather than qualitative. The central necrotic mass may become fully and characteristically cheesy, and may grow slowly larger by encroachment upon the surrounding zone of epithelial cell proliferation and productive and exudative inflammation. The areas of consolidation may coalesce so as to render whole lobes or lungs solid, so that to the naked eye the cut surface presents an irregular mottling of large or small white opacities and more translucent intervening areas. The intima of larger blood-vessels near the involved areas may be thickened and smaller trunks may be obliterated.

Out of eleven rabbits in which virulent tubercle bacilli injected through the trachea led to a considerable consolidation of the lungs, in only one were cavities found. This animal was killed on the thirty-sixth day after the injection. No bacteria other than the tubercle bacilli were demonstrable in or about these small cavities. This lung is shown in Fig. 4. It would thus appear from these experiments that while they may exceptionally occur, there is little tendency to the formation of cavities in rabbits' lungs thus experimentally the seat of an acute tubercular broncho-pneumonia caused by the injection of pure cultures of the tubercle bacillus.

Several of the older experimenters,* working before the discovery of the tubercle bacillus, have mentioned the occasional formation of small cavities in the lungs of rabbits in which experimental pulmonary tuberculosis was induced. Schnaef† reports the development of small cavities in the lungs of rabbits after the intra-tracheal injection of the tubercle bacillus.‡ On the whole, however, the formation of cavities in the lungs of rabbits subject to pulmonary tuberculosis is of rare occurrence. So infrequent is their development in these lungs even when the lesion is extreme, and when large portions of lungs are solid and cheesy, that it has been not infrequently that while various phases of pulmonary tuberculosis may be met have been experi-

mentally induced in the rabbit, the secret of this primary character of pulmonary phthisis—the formation of cavities—is still concealed. Baumgarten,* while admitting the occasional formation of small cavities in the lungs of rabbits affected with pulmonary tuberculosis as the result of a softening of cheesy material, considers them as very exceptional, and declares their occurrence as possible only after the tubercular lesion has existed for several months.

This set of experiments then shows that by the introduction of living tubercle bacilli into the lungs of rabbits through the trachea, tubercular lesions can be induced which vary in their appearance and characters from small foci of tubercular broncho-pneumonia resembling certain forms of miliary tubercles on the one hand, to large consolidated tracts on the other, which closely accord in appearance and structure with certain phases of extensive tubercular broncho-pneumonia or acute phthisis in the human subject, save that the formation of cavities in the animal is of exceptional occurrence.

These experiments also show that the tubercle bacillus alone is capable of inducing in the lungs of the rabbit not only the more characteristic phases of tubercular lesions—cell proliferation, tissue formation, and cheesy degeneration—but also an exudative inflammation of varying intensity closely dependent upon the number of bacilli introduced into the lungs.

Furthermore, these experiments indicate in accordance with those of Fraenkel and Troje† that the effect of the tubercle bacillus in inducing cell proliferation and exudative pneumonia may be exerted at considerable distances in the lungs from the seat of the tubercle bacillus itself, apparently by the diffusion of some soluble material elaborated or set free by the germ.

Finally, this set of experiments indicates that while in the presence of the tubercle bacillus alone in the lungs of rabbits cavities may form, this is unusual, and the cavities are not extensive.

Having thus established experimentally, in so far as it was necessary to do this by the new series of observations just described, the effects upon the lungs of rabbits of the separate introduction through the trachea of *Streptococcus pyogenes* and the tubercle bacillus, we are now ready to turn to the third set of experiments, which have for their object the study of

3. *The Effects of the Introduction of Streptococcus pyogenes into the Lungs of Rabbits already the Seat of Experimental Tubercular Broncho-pneumonia.*—In this set of experiments thirteen rabbits were used. These animals were operated in two groups at different times. The cultures of the tubercle bacillus were the same as those used in the set of control experiments last described, and the operation was in fact done at the same time, these animals being reserved for this set of subsequent injections. The streptococcus culture was the same as that used in the first set of controls. The amount of streptococcus introduced varied somewhat. The clear supernatant fluid was poured off

* W. Baumgarten, *Hist. des Tuberculoses*, 1914, p. 103, Med. Klin. 1914, p. 104.

† Schnaef, *Zeitschr. f. klin. Med.*, 1914, p. 104, Med. Klin. 1914, p. 104.

‡ It is worthy of note that Schnaef (loc. cit.) states that the formation of cavities in the lungs of rabbits is of rare occurrence.

§ The amount of streptococcus introduced varied somewhat. The clear supernatant fluid was poured off

* Loc. cit. p. 104.

† Loc. cit. p. 104.

from the flocculent sediment of several beef-tea cultures in tubes four days old. The sediment of these tubes was mixed, and from two to three cubic centimetres of this opalescent or slightly milky fluid was introduced into the lungs through the trachea of rabbits which had been at varying periods before similarly injected with virulent tubercle bacilli. The mode of injection of the tubercle bacillus was identical with that of the series of experiments last described, and was made with the intention of inducing as nearly as possible identical lesions.

The outline of these experiments on thirteen rabbits is as follows:

In two animals, thirteen days after the injection of the tubercle bacillus, the streptococcus was introduced and the animals were killed after ten days.

In one, twenty-two days after the tubercle bacillus, the streptococcus was introduced and the animal died after twenty-four hours.

In three, twenty-three days after the tubercle bacillus, the streptococcus was introduced. One animal was killed after seven days, and two after thirteen days.

In seven, twenty-eight days after the tubercle bacillus, the streptococcus was introduced. Two of the animals died, one on the fourth and one on the fifth day; five were killed, one on the seventh and four on the thirteenth day.

Of these thirteen animals, four only showed lung lesions so slight as to involve small areas of the lungs. The remaining nine showed areas of involvement of the lung from the size of a cubic centimetre up to a whole lobe or several lobes. It will be seen that the mortality was not increased by the later injection of the streptococcus, nine animals out of sixteen having died after the tubercle bacillus alone, while three out of thirteen died after the concurrent infection.

The point of view from which these experiments were undertaken favored the conjecture that while the streptococcus when introduced into the lungs of a healthy rabbit—an animal not very susceptible to the presence of this germ—produces, as a rule, but little local effect, still, when injected into a lung already in an abnormal condition from the presence of a tubercular lesion, it might be capable of producing more marked changes. The particular form of lesion which was anticipated as most likely to result from this concurrent infection was a consolidation from exudate pneumonia. The observations on man already noticed in this paper served to strengthen this anticipation. In fact, however, neither the gross nor the microscopic examination of any of the lungs of the thirteen animals in this series showed more involvement of these organs by pneumonia consolidation than did the animals in which the tubercle bacillus alone was introduced.

On the other hand, a more proportionate share was what had been the nature of the concurrent infection with the tubercle bacillus and the streptococcus showed, in addition to the lesions of a tubercular pneumonia, a small or moderate formation of nodules. Nine lungs out of the thirteen were, as has been stated already, considerably consolidated, and a great part of these consolidated lungs showed serious or various phases of development. The plates

graphs of the cut surfaces of these eight lungs are reproduced in Figs. 5-12. These pictures show better than a verbal description can, the general character of the effect of a secondary infection of tubercular rabbits' lungs with *Streptococcus pyogenes*.

These cavities are due to the softening and absorption of the necrotic small cell masses or the cheesy centers of the areas of tubercular consolidation artificially induced. They ran in size from that of a pin's head (Fig. 5) to those involving nearly a whole lobe. In some cases there is one cavity, in others a series of communicating chambers, crossed by cords and bands of old lung structures. They all communicate with the bronchi, and can be filled with fluids through the trachea. A few are lined in places with remnants of bronchial epithelium. They may be surrounded with little or much consolidated lung tissue, or, in fact, closely resemble the cavities which are prone to form in human beings in acute phthisis. The softening of the consolidated lung may begin as early as twenty-four hours after the introduction of the streptococcus. It may involve tubercular foci as small as two millimetres in diameter, or those which occupy a whole lobe. The cords and bands stretching across these cavities (Figs. 9 and 12) usually contain a bronchus and its surrounding connective tissue.

The microscopical examination of the series of lungs which have been the seat of a concurrent infection with the tubercle bacillus and streptococcus shows very clearly the successive steps in the formation of the cavities.

The necrotic centers of the consolidated areas may within twenty-four hours begin to become friable and loose in texture, or the central portion of the necrotic mass, retaining its coherency, may become sequestered and loosened from the surrounding solid lung tissue. Then disintegration of the necrotic mass proceeds rapidly with disappearance of the detritus, apparently by absorption, leaving a cavity bounded by whatever form of tissue composed the outer zone of the consolidated area involved. If the tubercular lesion were advanced so that the outer zones were fibrous, as in the rabbit may happen within two or three weeks, then the walls of the cavities may be fibrous and lined with an irregular layer of cell detritus. If, on the other hand, the particular tuberculous mass were composed in its outer zones of densely packed epithelial cells, or of those with more or less well formed spaces, or of a zone of dense living tissue infiltrated with small spheroidal cells, then the wall of the new-formed cavity has one or other of these structural characters. Cavities forming close beneath the pleura may have dense fibrous walls containing many old and new vessels (Figs. 10 and 11).

The large cavities, some of the smaller may be irregular or contain various forms of exudate, or may show, as the result of reversion, a series of irregular spaces lined with epithelial cells. Contractions of small areas in the walls of these cavities lead frequently to the formation of small bands of Old tubercle appearing to be surrounded in these contractions by granules and bands of the same material, sometimes softening and disintegrating the latter.

Some of the best examples illustrating the influence of the large cavity, and of the contractions of the same, are

rabbits' lungs to the central portions of the consolidated areas, it is not surprising that very few bacilli are to be found in the walls of these cavities. I have been able to find streptococci in the detritus inside the cavities and in the inner portions of their walls as late as the fifth day after its injection, but beyond this time the morphological examination fails to reveal them. Cultures were not made of the lungs presenting the later phases of cavity formation, as the lungs were, for demonstrative purposes, filled with alcohol through the trachea at once on the death of the animals. I found no evidence of increase in the streptococci after their introduction, nor could they be detected after twenty-four hours beyond the limits of the necrotic foci, where they soon disappeared. In one case only was there evidence of suppurative inflammation in the lung about the cavities, and in this case the morphological examination (cultures were not made) showed the presence of enormous numbers of cocci in pairs and short chains widely distributed through the lungs.

The effect, then, of introducing cultures of the *Streptococcus pyogenes* in the manner described into the lungs of rabbits which are the seat of experimental tubercular broncho-pneumonia with areas of local necrosis is to induce rapid disintegration and absorption of the necrotic tissues with the formation of cavities.

To what particular substance in the beef-tea cultures of the streptococcus this effect may be due my studies thus far have not made clear. Whether it is due to the presence of the germs themselves, or to metabolic products elaborated by them in the lungs, or to products of metabolism manufactured while the germs were under artificial cultivation and introduced with them in the beef-tea culture—these are matters for future investigation.

I am disposed at present to think that this rapid formation of cavities in the tubercular lungs of rabbits may be due to a simple chemical action of the fluids introduced into the lungs on the ill-nourished and necrotic foci. Whether the same material introduced into the bodies of rabbits in smaller quantities and in repeated doses, or introduced into their bodies at some point removed from the lungs, would have similar or dissimilar effects, may be shown by later studies. The whole matter of the curious disturbances of equilibrium, of local and general nutrition, and the effect of these on the immune system which must be induced in the body by the injection of the most virulent tubercular organisms, or induced in itself by bacterial action, is a matter that at present is so far from being settled as to leave little room for doubt.

Conclusion. The action of the tubercle bacillus in the lungs of rabbits. It has been well illustrated on exudative broncho-pneumonia, the local distribution of which has been followed up to the formation of cavities, and the process of absorption of the necrotic tissues. The effect of the introduction of the streptococcus into the lungs of rabbits is to induce rapid disintegration and absorption of the necrotic tissues with the formation of cavities.

The cause of pulmonary tuberculosis is subject to discussion, but it is beyond all the possibility in the direct transmission of the tubercle bacillus or the transmission of the disease, as the result of different modes of distribution of

the tubercle bacilli, such as through blood or lymph vessels, or through the air passages by aspiration; third, as the result of a concurrent infection of the lungs with other germs.

A considerable amount of exudative pneumonia in lungs which are the seat of tubercular inflammation may be caused by the tubercle bacillus alone.

An exudative pneumonia of varying extent and of extreme significance may occur in lungs which are the seat of a tubercular inflammation as the result of a secondary infection with other germs. The germs most frequently concerned in this secondary infection are *Streptococcus pyogenes*, *Micrococcus lanceolatus* (the "pneumococcus"), *Staphylococcus pyogenes*. The exact frequency of this secondary infection and the relative significance of the different germs involved are to be determined by further studies.

Experimental studies on the rabbit show that it is possible, by the introduction of the tubercle bacillus into the lungs through the trachea, to induce varying phases of pulmonary tuberculosis, some of which are practically identical with certain forms of acute phthisis in man, save that the formation of cavities is of exceptional occurrence. These studies further show that the introduction of cultures of *Streptococcus pyogenes* into rabbits' lungs which are already the seat of extensive tubercular consolidation and necrosis is followed, not by an increased amount of exudative pneumonia, but, in many cases, by the extensive development of cavities.

CONCLUSIONS.—In judging of the inferences applicable to man which may be drawn from these experimental studies on the rabbit, one must remember that this animal is, on the whole, much more susceptible than man to the action of the tubercle bacillus, and much less susceptible to the action of the *Streptococcus pyogenes*. Furthermore, the conditions of these experiments on concurrent infection, particularly the sudden deluging of the tubercular lungs with both living streptococci and their accumulated metabolic products, would suggest reserve in inference.

It certainly does not follow, because the secondary injection of streptococci into the tubercular lungs of rabbits does not incite an exudative pneumonia, that the accession of these germs, under the usual conditions, to human tubercular lungs does not frequently produce that result.

Nor does it certainly follow from these animal experiments that the *Streptococcus pyogenes* is a necessary factor in the development of cavities in acute phthisis in man. The inference seems justifiable, however, that, though not so rapid in their action, the presence of the streptococci, so often found, or of small quantities of their metabolic products gradually formed, may contribute to the necrosis and disintegration through which cavities in man are formed or increase in size.

The final significance of these animal experiments and their direct bearing on our conceptions of the nature and complications of acute pulmonary tuberculosis will be clear only after a more extended study of the frequency and varying conditions of such concurrent infections in man.

But they do show, with a clearness and positiveness which no assumption, however probable, could give, that

the concurrent action of two distinct pathogenic germs may result in a considerable modification of the lesions which either could produce alone.

It may be said, in conclusion, that, apart from the details which are still to be studied, and the general conceptions which time, research, and thought can alone perfect, the practical importance of the establishment of the view that tuberculosis of the lungs is liable to assume the character of a mixed infection by the entrance into the lungs and action on the already vulnerable pulmonary tissues of other germs can hardly be overestimated.

This conception of pulmonary tuberculosis serves to explain in the clearest way the varying vicissitudes of this disease, and the unfavorable course which it is liable to pursue when its victims are exposed to the widespread chances of infection with pyrogenic germs in cities and especially in crowded and improperly cleaned hospital wards. On the other hand, some at least of the beneficial effects of life in the open air of salubrious regions are explained, and the rationale of some of the favorable effects of so-called antiseptic treatment becomes clearer from this new point of view. But, beyond all, this conception of phthisis emphasizes the importance of definite and intelligent measures for warding off the complicating lesions by scrupulous attention to hygiene and sanitation, and especially the avoidance, in ways suggested by our modern notions of cleanliness, of common sources of aerial infection.

THE TREATMENT OF EPILEPSY BY TENOTOMY OF THE EYE MUSCLES AND BY OTHER SURGICAL MEANS.*

By CASEY A. WOOD, C. M., M. D.

CHIEF CLINICAL, WASHINGTON HOSPITAL.

RECEIVED FOR PUBLICATION, JULY 15, 1894.

TO THE EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I have the honor to acknowledge the receipt of your issue of June 23, 1894, containing the article on "The Treatment of Epilepsy," by Dr. J. H. Wood, and to express my appreciation of the interest and value of the same.

So, wisely and truthfully, preaches the Autocrat, and yet we seem impelled to go along, trying, as best we may, to discern, however dimly, the rays of the cone of truth shining fitfully through the darkness of our ignorance.

The more one studies the therapeutics of epilepsy, the more one is inclined to believe, with Dr. Holmes, that "there is hardly anything which has not been supposed to cure it." My purpose in this paper is to outline briefly the treatment of this disease, based on the latest knowledge of its pathology, and to present a summary of such other procedures as are likely to supplement the medical treatment of cases, resulting in a certain class of epileptics.

Probably the most exhaustive and most interesting monograph upon the surgical treatment of epileptics, since, as I have previously alluded to in the *American Journal of Hygiene*, of Holmes to Dr. A. L. Ranney's article published in the same issue, is the *New York Medical*

Journal, beginning with January 15, 1894. He there recites his experience of the treatment of twenty-five epileptics.

Whether one agrees or disagrees with the writer, one can not help wishing that a cure of epilepsy might follow the production in the patient's eyes of the ideal emmetropic and orthophoric state that Ranney appears to seek in treating his patients. As I take it, he would not be satisfied that his method had been a failure in any given case as long as there remained the slightest amount of even latent heterophoria present. I have for years believed that insufficiency of the eye muscles acted as an irritant in the production of certain symptoms—ocular and reflex—and I presume I have done my share of muscular advancements and tenotomies for their relief, and with the average amount of success; but there are some reasons, it appears to me, why I can not accept the position of Dr. Ranney that heterophoria is, in the majority of instances, the principal factor in the production of so-called idiopathic epilepsy. I propose to examine the whole subject as briefly as possible.

Practically everybody has heterophoria—that is to say, almost every one of us has insufficient oblique muscles, insufficient or excessive abduction, adduction, sursumduction, latent or manifest esophoria, exophoria, hyperphoria, or some of these either singly or combined. Orthophoria in this sense, the sense of Dr. Ranney, is a good deal rarer than that rare condition (once supposed to be so common) called emmetropia. For a year past I have been in the habit of making a cursory examination of those of my patients whom they and I considered cured, or at least for the present free of all their ocular troubles, and I find that the eyes of about five per cent. could be set down as orthophoric. I believe that, with the use of prisms, I could reduce that percentage to two or three. Whenever, for example, the abductors can not easily and shortly overcome the diplopia caused by a 9° or 10° (O. S.) prism, base in, it is probable that some esophoria may be demonstrated in a few days by having the patient wear a 1° or 2° prism, base out, for a week. Indeed, whenever there is seeming orthophoria, weak points in some part of the muscular balance can be developed by the judicious prescription of prisms to be worn for a number of days. The latent heterophoria becomes manifest.

In the same way exophoria for near work is almost universally present, and would not produce trouble in most cases, if it were not for the fact that it is usually associated with a certain amount of heterophoria at six metres or at some intervening distance.

Moreover, the patient who is orthophoric to-day may be heterophoric to-morrow, or he may have a period of time when he is heterophoric, and then a period when he is orthophoric, the transition being, in most cases, so all but unperceptible, that he would not be aware of it. As has been well said by the autocrat, and here it is scarcely a matter of propriety to say that he should be looked to in the afterthought.

I have been led to this conclusion, (1) by the fact that, in the most persons I have examined, the eyes were not in the same position at the same time, and (2) by the fact that, in some cases, the eyes were not in the same position at the same time, and (3) by the fact that, in some cases, the eyes were not in the same position at the same time.

* Read before the Chicago Ophthalmological Society, April 1, 1894.

form of phorometer, but it is the one I used in the examinations just referred to, and I consider it at least a very convenient and fairly accurate instrument.

I conclude that to most people the condition of heterophoria is not an abnormal state, and that an innumerable host of Anglo-Saxons go through, and have gone through, life unaffected in any particular by the possession of a small degree of heterophoria, and we all know that a corresponding multitude never learn, so far as the presence of eye symptoms is concerned, until they consult an oculist for their first reading glasses, that they have always had or had early acquired a certain amount of hypermetropia, myopia, or astigmatism.

If practically everybody exhibits or can be made to develop heterophoria, we may well be prepared to hear that most epileptics are also heterophoric. Ranney recognizes this, and claims that the large number of epileptics under his care showed a higher percentage in number and amount of muscular defects than the average, a statement that I feel sure is correct.

Oliver's (2) testimony on this point is of value. He made a critical examination of fifty adult male epileptics, nearly all Americans. Extra-ocular movements were intact in all cases, except weakness of the interni—just about what would be found in any fifty average Americans who never had epilepsy.

It must also follow that the association of heterophoria with ametropia is a very frequent one, and this is the case. Some writers speak as if the correction of refractive errors caused a disappearance of the heterophoria. That, in my experience, is only true in the sense that a readjustment of muscular effort commonly follows a judicious prescription of glasses, so that the strain upon the weak or overtaxed muscles is lessened, or the burden is transferred to another set better able to bear it. True heterophoria, fundamentally, has to do with too long, too short, over-developed, under-developed, or, possibly, misplaced muscles—conditions not to be changed in a few days or weeks by the prescribing of glasses, or, as may be added, permanently affected by arising lenses.

Some time ago I concluded that it was possible, especially from a study of the complaints of heterophoric patients who were or had been made emmetropic, to distinguish the symptoms of "latent heterophoria" (I am tempted to use the phrase from those due to ametropia) from those which truly come to think, with Kriess that, most true latent heterophorias are asthenopic. I know that some writers have doubted the existence of the partly heterophoric asthenia. The reason that I have been so much interested with a study of the symptoms of the system, under normal and the part of such the patient has no doubt some such as well as the finding in many asthenic patients the great majority of them in the presence of a latent heterophoria which previously before the glasses was corrected and remains after they have been worn to an undisturbed point.

Now there are important exceptions to this rule. It

often happens that asthenopic symptoms do not yield to the correction of the refractive error, or may yield only in part. The persistent symptoms in such cases may be entirely or partially due to the heterophoria, in which case a correction of the latter is urgently called for.

Just here I should like to draw your attention to a distinction which should in all fairness be made between cures of epilepsy brought about by treatment of the eye muscles and cures obtained by ordering glasses. It is admitted that the correction of refractive errors producing asthenopic symptoms has cured idiopathic epilepsy, and yet Dr. Ranney's practice is to immediately follow up his correction of the ametropia by tenotomies and advancements without waiting to see whether the milder and possibly quite as effective method of glass prescribing might not produce the desired result. Moreover, to the average reader the result, such as it was, must appear to be attributable to the operative part of the treatment. Equally permissible would it be after ordering glasses for asthenopic symptoms to cut the patient's eye muscles with a view of making him ideally orthophoric, and then to give the operation the credit of the performance.

As an example of epileptic convulsions and other reflex symptoms due to eye-strain and their relief by prescribing correcting lenses I report the following case:

I. F. has V. L. $\frac{20}{60}$; V. R. $\frac{20}{60}$. He is ten years old and one of eleven children in a perfectly healthy family. No history of mental disease in father's or mother's family. Five years ago had an attack of true epilepsy, and since then has been treated for epilepsy by a number of very competent medical men. Has an aura, screaming pain in head, and a sense of sinking. The attacks have come on as often as every week, and there have been intervals of a month or more. Lately has had an attack every two or three weeks. His eye symptoms are very many. Has intermittent convergent strabismus; has always had poor sight and great difficulties in reading, both in and out of school. His book is held close to his face; is often compelled to stop reading, owing to blurring that comes on shortly after beginning to read. Under atropine his refraction is $75 + 1.00 + 1.50 = 75 + .75 + 2 + 3.25 = \frac{20}{60}$.

Ordered him full correction, which he is now wearing with comfort. He can read for hours at a time and simply enjoys life. *But he can be made to see double with a red glass.* His abduction is 1° . Adduction, 20° . No hyperphoria. Snellen's test all right to $\frac{20}{60}$. His general health is very much better and he has not had a single attack of epilepsy since the first dose of atropine was put into his eye, six months ago.

I have now under treatment a somewhat similar case, except that there can be no question of heterophoria. The patient, a young man aged twenty-six years, with a convergent strabismus, has had several severe epileptic attacks and recently frequent seizures of *petit mal*. Asthenopic symptoms marked; no food health and spirits and can no longer work. One eye is quite amblyopic (V. $\frac{20}{60}$) and the correction of the refractive error (under atropine) has not improved vision in that eye. He has a 3.50 D. in both eyes. I dropped his treatment completely, and since wearing his glasses he has been free of attacks and is greatly improved in all respects. He has been too short a time under observation to draw any conclusions from treatment.

In my opinion certain kinds of heterophoria, as well as heterophoria in certain kinds of people, may produce epilepsy, and in support of that assumption I wish to present the histories of two patients who used glasses for a long time before any interference with the eye muscles was attempted. In the boy's case I believe that the heterophoria was the cause of the attacks, and that its relief brought about a cure or temporary relief of the epileptic seizures.

M. H., aged thirteen years, a studious, music-loving, but delicate boy, has always been nervous, dyspeptic, and irritable. For nine years he has had epileptic convulsions. These attacks, which lately are frequent—on an average about once in two weeks—are preceded by a sensation of terror; they vary greatly in intensity and he often loses consciousness. Owing perhaps to the character of the aura and the time that elapses between the attacks, he does not fall down during the fit. He has known for some time that he sees better with one eye than with the other. Suffers much from headache, confusion of images, car sickness, and from attacks of nervous irritability, nausea, and dizziness, which last, however, are unlike the convulsive seizures. He habitually turns his head to one side in efforts to see.

Dr. Archibald Church, who examined him, thought that the whole train of symptoms resulted from his defective ocular apparatus. The condition of his eyes last October, when I first saw him, was as follows: V. L. = $\frac{1}{10}$; V. R. = $\frac{1}{20}$. Under atropine he had L. = 175; R. 20 + 0.25. I ordered him for constant wear -150 + 140 - 0.25, in view of the condition of his eye muscles. With these glasses he obtained $\frac{3}{4}$ and J. i in either eye. The cover test shows marked insufficiency of the interni, and with a red glass before his right eye there is crossed diplopia, the images being at 20 about 14 apart, and this double vision he can not overcome. Adduction, 1° to 3°; abduction, 20°. Snellen's test shows that he does not get more ocular vision at six metres, nor is he always able to read a test letter two inches behind a common point at twenty-five centimetres. His accommodation gives the same result at times. Pencil chart is deficient. He sees the glasses for two months, most time exercising his interni after the method of Savage, refraining from work and living mostly outdoors. During this time the epileptic seizures are well kept under control, but he complains that the accommodation is strained and his eyes are irritable, and that he is unable to read the newspaper. I told him that he might think of his eyes as being like a pair of muscles that could be trained by the method of Snellen, and that he should exercise them in the same manner as he would exercise his arms and legs. He did this, and in a few days he was able to read the newspaper. I told him that he might think of his eyes as being like a pair of muscles that could be trained by the method of Snellen, and that he should exercise them in the same manner as he would exercise his arms and legs. He did this, and in a few days he was able to read the newspaper. I told him that he might think of his eyes as being like a pair of muscles that could be trained by the method of Snellen, and that he should exercise them in the same manner as he would exercise his arms and legs. He did this, and in a few days he was able to read the newspaper.

The second case is but an encouraging one, and as I do not believe the heterophoria can be cured, I do not think the epilepsy will ever be relieved, unless perhaps by the suppression of the lower motor fibres of the ocular nerves.

Mr. J. C. O., aged thirty-two years, had commenced having epileptic seizures when he was ten, and has been almost free from work since that time. He complains of nervous irritability, headache, and from attacks of nervous irritability, nausea, and dizziness, which last, however, are unlike the convulsive seizures. He habitually turns his head to one side in efforts to see.

of a neurotic family. When seventeen years of age had an attack of epilepsy, then one ten years ago, and for the past five or six years has had mild and frequent attacks. These are always preceded by a feeling of nausea; then consciousness is lost for a moment, if the attack be a mild one, and for a longer time if the attack is severe. Lately she has them several times a week. The attacks are slightly relieved by full doses of bromides. Her refraction is as follows:

V. R. = $\frac{1}{10}$; V. L. = $\frac{1}{20}$. L. 50 - 0.50 + 0.6 = $\frac{3}{4}$; R. 0.25 - $\frac{1}{10}$.

V. R. = $\frac{1}{10}$.

There is now and then a marked tendency in the right eye to turn in during convergence. With the red glass before the better eye there is homonymous diplopia and the images stand two inches apart. She complains of occasional diplopia, especially while wearing her glasses. I gave her both partial and full corrections and made her use one eye alone without effect, except that the asthenopic and visual symptoms were relieved. Occasionally she has read an hour at a time and has had less headache on using one eye alone with correction. At the end of six weeks I did a free section of the right internal rectus and later on a partial tenotomy of the left with great improvement of the muscular condition. The red and white images, although never entirely coalescing, were close together. Snellen's test up to $\frac{3}{4}$ all right. There was no strabismus on near fixation. The eyes appeared and were to all intents and purposes straight. The heterophoria tests by the phorometer were never very satisfactory owing to the shifting character of the images. Finally, I sent the patient to the country for a month, during which time her attacks decreased in number and severity (to about one a week) but got worse on return to the city. She then went back to bromides and left me.

Dr. Ranney must either hold that epilepsy may be the sole sign of the heterophoria exhibited by the patient, or place a very small value upon the evidence for and against its producing symptoms other than the epilepsy, because in the twenty-five histories he has given us he says nothing whatever about the ocular symptoms. It is true that he gives us a note in which he says that sixteen per cent. of his patients' eyes were crossed, but does not say what term he complained of asthenopia. I regard this as an important matter, and consider its absence from the reports of Dr. Ranney's cases as especially unfortunate. I do not think we are justified in asserting that an organ that performs all its functions properly, that so far as the owner is concerned works in perfect order, can be held responsible for the production of such a marked group of symptoms as constitute the so-called idiopathic epilepsy. The burden of proof still rests with Dr. Ranney and others of his way of thinking to show that epilepsy may be the sole sign of heterophoria. I reply that I cannot think Dr. Ranney is quite correct in his opinion that the eyes are not primarily affected in these cases, and that some persons, without effect of other causes, have extra-ocular muscles affected by some disease. I shall consider later in this paper.

My experience of some cases in which and very different cases. Whenever I am consulted about the treatment of an epileptic who is not aware of the existence of the eyes, who can read with ease on a yellow card or with strabismus, but who has been blind since her eyes were strabismic, I regard the eyes as being the cause of the epilepsy. I regard the eyes as being the cause of the epilepsy.

periment that I would prefer not to make, and I should further be inclined to regard any favorable result obtained from the correction of his ametropia and heterophoria probably due to other influences. I have, however, made the attempt in several cases with no result worth speaking of. My last and average case is as follows:

C. S., aged fifteen years, has had slight but very frequent attacks of epilepsy for several years—two or three a week, but very mild. No cause apparently for them. Has had all kinds of treatment without avail. V. $\frac{3}{8}$ in either eye. Has absolutely no symptoms that can be honestly referred to his eyes except a little marginal blepharitis. Has headaches only after an attack of epilepsy. Under atropine developed 1.25 of H., for which I ordered +1 for constant wear. Has a slight exophoria, $\frac{1}{2}$ ° for distance and 2° for near. After wearing glasses for three months I found his muscular balance at 20' to be about perfect, but there is still 2° or 3° of exophoria in accommodation. After wearing glasses for eighteen months without appreciable benefit I learned that he was being cured by somebody's patent medicine.

Referring to Dr. Ranney's twenty-five cases, it is noticeable that the author operated upon the eye muscles in every instance; if very little or no manifest heterophoria was found, he was always able to produce it. This error was almost invariably esophoria, developed by the prescribing of prisms, base out, to be worn for a certain number of days. Now, while I do not believe with Savage that a certain amount of esophoria for the distance is the usual and possibly normal concomitant of emmetropia and hypermetropia, I do know that it can be induced ("made manifest," if you will) in pretty nearly everybody who has not unusually strong exophoria, and that small degrees of it are as easily induced by atropine as is hypermetropia of three or four diopters and less.

The majority of the patients were relieved or cured. Some of those relieved wore glasses prescribed for them, and the attacks of epilepsy usually recurred with greater frequency or violence whenever the glasses were laid aside. In most cases a slight degree of heterophoria remained after relief had been obtained. Among the failures were also a few cases where the heterophoria had been almost or entirely corrected. Some of them were probably cases of latent epilepsy.

It is not surprising, in view of these twenty-five cases, that the author suggested that a small degree of heterophoria be induced in every case. I would like to examine them further. Nine were cured. I append a brief report of the cases. The general treatment is that given above. In each case the treatment of the eyes is the same, and the results are given. The removal of prisms, to which I have referred, is not necessary in every case.

I. From Oct. 1 to Oct. 15, 1891, a patient, aged 15 years, was treated.

II. From Oct. 15 to Oct. 20, 1891, a patient, aged 15 years, was treated.

IV. From Oct. 20 to Oct. 25, 1891, a patient, aged 15 years, was treated.

properly ordered a full correction. Had a manifest of 4 es., and after being duly tenotonized has been wearing his glasses constantly.

V. Two attacks a month previous to treatment to a slight attack during the past three years. L. 90° + 0.50. R. 180° + 4.0 cyl. — 1 ax. 90°, and the usual tenotonies for the relief of 11° of esophoria.

VI. This is in all probability a heterophoric epilepsy; there was practically no refractive error, but such marked weakness of the interni that the patient carried his head to one side; numerous convulsions to one slight seizure in thirteen years.

VII. From four a year to none in two years and a half. This patient had his full correction (+1) ordered for reading. Operated on for 8°—15° es.

X. From a severe fit and numerous attacks of *petit mal* to no attacks for over two years. Ordered +1 bds. (has +1.50).

XIII. This was an emmetropic case, and for two days no heterophoria could be found, and her abduction was 6°, adduction 23° at the first examination. By prescribing esophoria prisms to wear, a "latent" esophoria was developed in ten days, corrected by tenotomy of the right internal rectus. The patient had no attacks for a year. This case reads to me very like a case of hysterio-epilepsy, which would be very likely to improve or get well under the moral influence of any operation.

XV. Six seizures a year to none during six months. This appears to be a case proper for operation. Under the influence of esophoria prisms he developed diplopia with the red glass, and was practically emmetropic.

Thus, so far as we can judge from the imperfect history given of their eye symptoms both before and after tenotomy, three, and at the most four, of these twenty-five patients were cured by the operative treatment of their heterophoria.

The results in a few other cases may fairly, I think, be attributed to the careful correction at Dr. Ranney's hands of their refractive errors.

What proportion these cases of cure bear to the total number of patients subjected to eye treatment by Dr. Ranney we can not estimate without hearing further from him.

Finally, one must not forget the remedial effect of impressions made upon the nervous system of the epileptic by an operation coupled with the hope held out of relief by a new and curious surgical procedure. There can be no room for doubt but that to this latter agency alone the desirable result is due in certain of the instances offered by Dr. Ranney. It probably assisted in others.

I am in sympathy with Dr. Ranney in his objection to the employment of bromides in the treatment of epilepsy; as he says, "to benumb the cerebral centers by a drug so that they cease to respond to reflex irritation from any peripheral source is not curing the disease."

And while I do not think that eye strain, and especially that eye strain set up by the presence of latent esophoria, is so frequently a cause of epilepsy as Dr. Ranney would have us believe, yet in teaching the profession the as yet half-learned lesson that idiopathic epilepsy, so called, is very often the evidence merely of some peripheral irritation, and that one of the first duties of the physician consulted by an epileptic is to find and remove all peripheral irritants, the case writer in the *Journal* deserves the gratitude of his profession.

W. J. WOOD.

A CASE OF JACKSONIAN EPILEPSY.

CESSATION OF FITS AFTER OPERATION.

By R. H. CUNNINGHAM, M.D.

THE UNIVERSITY OF VIRGINIA, AND MEDICAL DEPARTMENT,
MEDICAL COLLEGE OF VIRGINIA, RICHMOND, VA.

G. P., a well-nourished negro miner, aged thirty years, was kindly referred to me for examination last January by my colleague, Professor George Benjamin Johnston. In consideration of the fact that his case presents numerous manifestly interesting points, and is such an excellent example of successful cerebral operative interference, I deem it quite worthy of a place among the somewhat similar cases already reported.

History.—Absolutely negative until two years ago, when he was struck with a brick on the left side of the head anteriorly. On recovery of senses, four days after, he found that he could just move his right arm and fingers; slightly better, the right leg. He was also unable to speak, though he understood all that was said to him. He had never been able to read or write. He had numerous "spasms," chiefly affecting the right hand, forearm, arm, shoulder, face, and very rarely the leg.

Six days after the accident he was operated upon by the attending surgeon of the mines "for a bone pressing on his brains," after which he gradually more or less completely recovered the power of motion and speech, until at the present date he is in this respect as well as ever. The fits have, however, continued to occur about twice a week. He has moderate headaches at times, usually located about the region of the old cicatrix, situated an inch behind and three inches and a quarter above the left external angular process.

The Fit.—In several I had the good fortune to observe and carefully test him. They begin in one of two ways, usually with numbness and tingling of the right hand, especially marked in the thumb and index finger, less so in the other fingers. This was followed in a few seconds by a turning in of the thumb. In fifteen seconds by stop watch alternate tonic and clonic convulsive movements occurred, beginning in the hand and spreading to the forearm, arm, shoulder, and face. The head and eyes turned to the right, and his power of speech was then lost. Consciousness was perfectly retained, and though aphasic, he thoroughly comprehended all that was said to him, and was able to communicate with me by signs and gestures of the left hand. There was no involvement of the lower extremity in the fits in which I saw him, and he still possessed complete voluntary control of the opposite upper and lower extremities. In fact it was by this means that he was able to respond to signs on the application of the various tests after he had become aphasic.

Occasionally the leg also became involved and even, though very rarely, the left upper extremity. But under no circumstances has he lost consciousness. Concomitant with the above there occurred at the following order, as accurately as could be ascertained, the following changes in the different parts of the muscular sense, tactile and kinesthetic, loss of sensation, some partially marked in the hand and on the right face. Through the result of the sensory reflexes, there was no involvement of the trigeminal ganglion.

After the cessation of all convulsive movements in the affected extremity ceased and it resumed normal function. The sensory and other functions were determined in the following order: The aphasic patient, standing, the thumb was successively placed on the end of the fingers, the fingers had previously disappeared by sight, and the tactile sensation he then asserted. In this case, even the sense of touch returned, and at the end of fifteen minutes the patient could again be

entire upper extremity, though he complained of considerable numbness and stiffness in the limb. The numbness continued for about half an hour.

In the second or unusual method of onset he first has a sensation of cramp in the epigastric region, followed in a few moments by loss of speech. This is followed by the various phenomena mentioned above, usually, however, more severe in character and with more frequent extension to the lower extremity or even of the right upper one. As before, no loss of consciousness. Physically, his examination showed a large triradiate cicatrix firmly adherent to the underlying bone, situated an inch behind and three inches and a quarter above the left external angular process. The right naso-labial furrow was slightly flattened.

There was a moderate tendency to slight superextension of the right little finger, though movement and muscular co-ordination were excellent, the patient being an expert banjoist.

Right grasp, 80; left grasp, 110.*

On consideration of the above symptoms it was concluded that the probable lesion was meningeal thickening with adhesion of the membranes either together or also with the cerebral cortex, its chief seat being about the genu of the Rolandic fissure and adjacent convolutions. The operation was performed January 20, 1894, by Professor Johnston and myself, after the usual preliminary antiseptic precautions had been taken.

The patient was anesthetized with chloroform and a large curved scalp incision made. The flap was then turned down and an inch-and-a-quarter trephine applied over the region of the genu, previously determined by Horsley's method. On removal of the button of bone, the orifice was enlarged with a rongeur, especially forward and also downward. All the roughened bone, firmly adherent to the dura at the seat of the old lesion, having been removed, the thickened dura was vertically opened over the fissure of Rolando. On inspection, considerable dural thickening with adhesion of membranes together was found over the post-central, the precentral, and the posterior tip of the second frontal convolutions. A like state of affairs was present beneath the site of the old cicatrix and also a small adhesion over the lower extremity of the anterior central convolution. These were separated with a Horsley dural separator and parts of the thickened dura removed. The dura was then sutured with fine catgut, the scalp flap replaced and sutured, and the patient, after the application of an aseptic gauze dressing, returned to bed.

On the day following the operation he had one slight Jacksonian fit, but none since.

The temperature on the evening of the second day rose to 101° F., but fell to normal by the next morning and continued so. All sutures were removed on the seventh day, the scalp incision having completely healed. The patient was discharged with orders to attend the out-patient department, where he has been under my observation ever since.

The instructive character of such cases as this is generally admitted. Not only do they show fully the anatomical nature of the morbid process and of the cerebral cortex, but also they positively lay further on with a means of more accurately determining our knowledge of the exact functions of the various different parts of the cerebral gray matter, each aspect of which, as Horsley and others suggest, very probably has been in the past somewhat neglected.

It is especially noticeable in this case that the phenomena presented by it, with only technical method to aid, reasonably conclude that the seat was in Rolando, the

to take a small portion with which to inoculate the second, third, and succeeding number of nutrient tubes. Several successive plate cultivations may be practiced, but when the investigator thinks he has by these means isolated the one species of bacterium that he is studying, he says that he has obtained a "pure culture" of it and then proceeds to raise successive generations from this pure culture.

A culture, then, is called "pure" when only a single species of bacterium is present. If the investigator intends to convey the idea, when he uses the word "pure," that nothing else but the special bacterium is present, then the cultures are not pure. The material used for experimental inoculation on animals consists of this single species of bacterium, of which account is carefully taken, plus a portion of the culture medium and also plus other substances which may actually be the true disease-producing agents. By the plate and tube cultures the bacteriologist has attempted to remove by dilution all of the morbid matters outside of the "specific" bacterium found in the original inoculation material. This dilution is great; it is enormous. Pasteur has shown that when a single drop of the original inoculating morbid material is used in the manner just described to inoculate twelve successive culture tubes, the dilution of the original drop of blood or sputum is equal in the twelfth generation to a dilution as great as if the original drop had been diluted by a bulk of water equivalent to the size of the earth.* At first glance such an enormous dilution would seem to have practically diluted away all of the morbid matter in the original drop so that the bacteria could be studied alone, free from any foreign matter. But should an infected drop of blood or sputum be placed in a bulk of distilled water equal in amount to the size of the earth, we should not only lose all the foreign morbid elements of the drop, but also each and every one of the "specific bacteria." What dilutes part of the infected blood constituents dilutes them all, and if the foreign elements are diluted to a point beyond finding, then will also whatever bacteria may be present be diluted till not a trace could be found. It is only because the comparatively low inoculation force of each generation of culture can grow and multiply to the great extent that we do that a small part of the growth we need to produce a succeeding generation, by which it is possible for us to carry these experiments through so easily here and there over the laboratory apparatus of an enormous dilution. Tell if the bacteria are thus diluted and still are able to cause disease, then there is nothing in the methods of bacteriology to prevent the often claiming, which may be true, but, mentioned in the original infected drop of blood or sputum to maintain an equal source of growth and thus be used present in a certain tissue, no matter what generation it may represent, all granted that other morbid elements pass away, life, and hence the power of growth. Whether it does or not is another question which may be settled outside of bacteriology.

The whole matter of these experiments hinges on the fact that bacteria are so very minute that we cannot have

been, nor may be, discovered by which we can isolate a few and entirely divest them of any other foreign matter, and, thus isolated, study them with reference to pathogenesis. The question of outside elements that may be the true pathogenics constantly occurs in the records of practical bacteriological pathologists and are readily found. In one popular text-book on pathology (Ernst Ziegler, vol. i, p. 314), Davaine, Coze, and Feltz are quoted as making one bacteriological statement which Koch and Gaffky say depends on the first-named investigators having used "impure cultures"; Wernich makes another statement which Gaffky disputes for the same reason, and the same happens Buchner and Nägeli, who are answered by Koch and Klein.

Returning to rules *a* and *b*, the following objections may be registered against the deductions widely accepted and based upon the methods used by bacteriologists. Rule *a* is that in order to label a bacterium as specifically pathogenic, this same micro-organism must constantly occur in the tissues or discharges and in sufficient numbers to give rise to the specific symptoms. The deductions inferred from this rule are actually false in that they accept concomitance for causation; in other words, because a specific bacterium is present in every case of a specific disease (if such is the fact), therefore to say that it is the cause, no matter how great the numbers may be, is illogical and can not stand. As well might we say that the leucocytes are the cause of itch because always present in large numbers in the local inflammation of that disease. Rule *b* has already been in part covered, but may again be referred to. It is that the specific bacterium (together with other possible morbid matters) taken from diseased animals shall produce in other animals the same disease. This excludes nothing and includes any number of other substances other than the bacterium which may be the efficient pathogenic agent; all it shows is that the disease under consideration can be transmitted by contact of one animal with another.

Now, putting the rules and teachings of bacteriologists to the test of clinical and practical experience, two questions clearly present themselves for an answer. One is, If specific bacteria are truly pathogenic, are they then always found in their reputed specific diseases? The second is, When found present, is the specific disease that they are said to cause actually at the same time present? As to the first question, if the specific bacteria are not always found in their reputed diseases, how can they be their disease cause that disease? Evidence taken from the discoveries of practical bacteriologists ought to furnish sufficient answer. For convenience' sake we shall select three of the most clearly defined diseases concerning which bacteriologists are well united and for which they have isolated, cultured, measured, and characterized the causing cause, be these diseases as *Anthrax*, *Diphtheria*, and *Colic* of the horse. The reputed results of each are well known. As to *Anthrax* disease and the presence of the disease causing bacterium, H. Pasteur's words (that out of the twenty-four cases of *Anthrax* observed in France and England in 1880, during the last of June and those seen

showed the presence of Koch's comma bacillus, and none of the other cases had in common any other known bacterium.

As to diphtheria, the discoverer of its bacillus, Loeffler, states,* "on the other hand, in many cases of undoubted diphtheria these bacilli were not found. They did not produce any symptoms when applied to uninjured mucous membranes of several animals; no paralytic symptoms followed their inoculation; and finally, similar organisms, morphologically and physiologically indistinguishable from them, were found in healthy saliva." Dr. Armand Ruffer states that "the bacilli of diphtheria, discovered by Klebs in 1883 and Loeffler in 1884, are present in the most superficial parts of the membranes only," which of course is at a point the most distant possible from the location of the greatest injury, which is systemic and not local in its character. This is also the point most favorable for the lodgment of any of the many bacteria of putrefaction that are found everywhere in the air and would readily thrive where such an abundance of diphtheritic rottenness, together with suitable warmth and moisture, are so agreeably at hand. Loeffler also demonstrated the existence of his bacillus in the mouth and throat of patients as late as three weeks after the disappearance of the fever, which fact will again be referred to when we touch the second question.

The third disease to be reviewed is tuberculosis. Concerning this condition much has been written, and the bacteriologist is evidently ready to stake the reputation of his conclusions on this disease if on no other. Says Professor Hamilton: "The author has met with a case in which both lungs were rendered perfectly solid from an extremely acute eruption of tubercle, but in which not a vestige of any tubercle bacillus could be discovered after the most careful and prolonged examination. A remarkable fact was that none of the nodules in the lungs had caseated. . . . It is usually where the nodules have caseated and are in the process of disintegration that the largest deposits (of bacilli) are to be seen, but even in lungs in this condition it is sometimes impossible to demonstrate it (the presence of bacteria) with anything like the constancy that might be expected." (D. J. Hamilton, M. B., F. R. S. E., etc., *Text-book of Pathology*, vol. 2, p. 419.)

As to the second question: When found in an organism, is that disease which the specific bacterium is said to cause at the same time present? If the specific bacteria can be present in sufficient numbers to be seen by the microscope in ordinary smears, and, and but by that fact produce the specific disease with which they are charged, the possible causative connection between them and the disease does not appear. Reference has already been made to the fact that Loeffler's *Bacillus diphtherie* is found in the human throat, after the illness passed off the fever. The natural question is, How can the specific bacilli be there, and not cause a relapse of the disease? Placing it another of the related points, the *Journal of the American Medical Association* (the editor, 1893) quotes the famous medical books on the tuberculous

of the Johns Hopkins Hospital who always had in his saliva an abundance of the *Diplococcus pneumoniae* from which he used to supply the other workers with samples for culture. And yet no mention is made whether he suffered constantly from some form of pneumonia, which then probably was not the fact. And again, Dr. E. L. Shurley, of Detroit,* reports the case of a monkey put under his own and Dr. Gibbs's care for study and experiment. The animal presented the clinical symptoms of nasal tuberculosis. A microscopic examination of the nasal discharges "revealed tubercle bacilli in large numbers. . . . Judge of our surprise when the post-mortem examination revealed no microscopic evidence of tuberculosis anywhere, not even in the turbinated bones, although all the bony parts of the nasal passages were softened." And again, Dr. J. H. Woodward, of Burlington, Vt.,† relates two cases of syphilis treated with mercury and iodide of potassium, which recovered "in a few weeks." They both suffered from persistent cough and the sputa of each was examined by Dr. C. S. Boynton, "a man competent to make such examinations," who pronounced both cases to be tuberculosis from the presence of its bacteria. "The results of the microscopical examination were positive," but the later history of the cases showed the diagnosis to be wrong. It may be objected that the simple presence of the "specific" bacteria does not always cause disease, and that this is admitted by bacteriologists. But these admissions open up the possibilities of a limitation of bacterial pathogenic power that may amount to annihilation. Professor N. Senn says:‡ "It has been conclusively shown by clinical experience that pathogenic spores may remain in the healthy body in a dormant condition for an indefinite period of time until by some accidental pathological changes the tissues in which they may exist have been prepared for their germination. Numerous experiments will be cited elsewhere in which injections of pure cultures directly into the circulation produced no ill effects in healthy animals, but when previous to the injection, or soon after, an injury was inflicted in some part of the body, the microbes produced their specific pathogenic effects at that point." We therefore have a condition in which thousands of living "specific" bacteria together with a comparatively large amount of their suitable food was injected at a given point without causing any appreciable ill effects. The process of injection must have caused at least some slight tissue destruction, which gives tissue *débris*, but this was not enough to invigorate the bacteria; more destruction was needed, a serious injury must be inflicted, and this injury must give rise to much *débris* in that locality before the bacteria increased in numbers. We know that a function of bacteria is to consume and disorganize or *consume* *débris*, and what reason is there to state that they were not exercising in that function alone after the serious injury had produced tissue destruction and consequent *débris*? One thing, at least, clearly appears.

* *Br. M. J.*, vol. 18, p. 129, November 7, 1891.

† *Br. M. J.*, vol. 18, p. 129, December 16, 1891.

‡ *Br. M. J.*, vol. 18, p. 129, December 16, 1891.

that while there was no great tissue destruction, there was no bacterial activity, but after tissue *débris* had been abundantly produced, bacterial nutritive activity became great: the cause is tissue destruction and the effect bacterial increase. Not only is this tissue *débris* dead, but it also very rapidly becomes inorganic by being acted upon by the chemicals circulating around it in the fluids of the body. Bacteria are vegetable organisms,* and it is only the vegetable living protoplasm that can appropriate and convert into its own substance inorganic elements—i. e., can consume them. Whatever the vegetable protoplasm consume, is inorganic, whatever the animal protoplasm consumes is organic.† As bacteria are vegetable and live off inorganic substances, they can not directly attack and devour animal tissues; it is therefore impossible for the *Bacillus tuberculosis* to produce tissue destruction by a devouring process, nor can any other reputed specific bacterium act in this manner. The only other manner by which bacteria can be of direct causative injury to the human body is by separating from their cell walls some substance poisonous to the animal tissues. The name ptomaines has often been given to such supposed poisons. But if the bacterial cell wall becomes disorganized into ptomaines and these act as tissue poisons, through which action we obtain tissue *débris*, no such condition could then obtain as mentioned by Professor Senn in which many bacteria were injected into healthy animals and there produced no disturbances. The disorganization of the bacterial cell wall, whatever the product may be, is in direct proportion to the bacterial nutritive activity, and, as Professor Senn's injections also contained some nutritive substance, probably gelatin, this furnished some food to the bacteria; this must result in some nutritive activity, and this to some disorganization of their cell walls, which, if the product were a ptomainic poison, would lead to some tissue destruction, and it would have taken but a short time before the relation between bacterial growth and consequent tissue destruction would have produced the reputed specific disease. The same method of reasoning with similar successive steps can be followed where the disorganization of the bacterial cell wall is considered dependent upon the favorable degree of heat of the body or upon some chemical process acting upon the cell wall and arising either from internal or external sources. Neither is there much foundation for the idea that the nutritive activity of bacteria robs the normal tissue elements of their food supply and thus drives them to death. Were this true we could not then have such a constant and dominant bacteria in the alimentary canal as bacteria can not be kept out of our bodies and are always present in some form, and the reputed specific poisons must often be present, we could not escape a condition of the most horrible bacterial diseases, one following the other. A further objection may be registered—namely, that bac-

teria can not live off the same class of food as does the living protoplasm of the animal tissues, for the animal lives either directly or indirectly (as in case of carnivora) on organic substances, while bacteria, being vegetable, live on inorganic substances. But time and the diligence of many investigators will, no doubt, soon determine the approximate position of bacteria in the economy of nature.

115 OAK STREET.

THE COMPLICATIONS OF BRONCHITIS IN CHILDREN.*

By A. REICH, M.D.

THE most serious complications of bronchitis in children are (1) inflammation of the small tubes, and (2) inflammation of the capillaries, or broncho-pneumonia. They may be the outcome of the idiopathic bronchitis, but are most frequently met with as complications of the symptomatic variety in measles, whooping-cough, influenza, typhoid, diphtheria, scarlet fever, in order of frequency.

Post mortem we see, in bronchitis of the small tubes, the lung presents either nothing abnormal on inspection, or it may be dark in color all over and have some atelectatic spots, usually at the base posteriorly on both sides, or along the edges of the lobes; or we may find yellowish-white spots under the pleura, the size of a pin's head, which are soft to the touch, and yield pus on being cut into. On cutting into the lung, frothy serous fluid or muco-pus exudes, varying in color from yellowish white to dark red. At some points pure pus makes its appearance, which denotes the situation of a small bronchial tubule.

The lining of the bronchial tubes is the seat of inflammation; there are redness, congestion, shedding of epithelium, degeneration of the same, round-cell infiltration of the peribronchial connective tissue, and regeneration of cells. If this process continues, we very soon get inflammation of the capillaries, or broncho-pneumonia. This may be characterized by discrete consolidated lobules, or, if very extensive, constitutes the so-called pseudo lobar pneumonia. The consolidation is usually located posteriorly at the base, is wedge-shaped, reaches up to the lower angle of the scapula; frequently the lingula is primarily involved.

And, as a rule, it is present as well as suppurative and hence involvement of the pleura. The lung has a grayish appearance; the consolidated portion feels hard, is slightly elevated, while the atelectatic spots are depressed and dark red from congestion.

The emphysema is vesicular, seen mostly along the borders of the lobes, can be well recognized from the fact that, true vesicles being formed according to the "sieve" or "sponge" theory, smaller bronchi find vesicles from the terminal portions of the lung. However, broncho-pneumonia may exist while the capillaries and connective tissue pass the rupture into one another and form small abscess cavities, or even large pyogenic cavities. The process is essentially fibrinous, which breaks very easily.

*The *Practical Treatment of Diseases of Children*, pp. 144, 145, 146, and 147. New York, 1893, and *Practical Pediatrics*, pp. 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**Practical Pediatrics*, pp. 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**Practical Pediatrics*, pp. 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522

Fluid is rarely if ever present in any amount. On microscopic examination, the epithelium of the small bronchi and vesicles is in a state of fatty degeneration; there is round-cell infiltration in and around the bronchus; the lymphatics are inflamed—these latter two factors are, according to Dr. Finkler, causing inflammation and consolidation of the adjoining vesicles. Fibrin, so pathognomonic of croupous pneumonia, is also present, as well as white blood-corpuscles.

As to the mode of origin, Kronmayer states that the inflammation originates either from stopping up of the small tubes, or, what occurs more rarely, by primary affection of the delicate peribronchial connective tissue. In the origin after the first mode, we get the so-called inflammatory atelectasis—that is, falling in of the inflamed alveolar walls—in which inflammation originates from infection of the alveolus, with bronchial secretion containing pathogenic bacteria.

Lichtheim has shown that, after the stopping up of a bronchus with a mucous plug, atelectasis can develop very soon; two hours after stopping, the air is absorbed and the walls have fallen together. In inflammatory atelectasis the alveoli are, according to Kronmayer, first filled with round (migration) cells—swollen epithelium; the alveolar capillaries are over-filled with blood-corpuscles. Later in the disease the perialveolar and peribronchial connective tissue participates; hyperplasia of the same develops, compressing the alveoli, and change of their contents is the result. Pus cells appear, and, by fusion of the alveolar epithelium, multinucleated giant cells form. We also find leucocytes, red blood-corpuscles, and detritus. If the inflammation continues to spread to the interlobular tissue, the discrete lobular inflammation runs together, and the pseudo lobar pneumonia results.

In the origin by the second method—that is, the primary inflammation of the peribronchial connective tissue—with increased hyperplasia we also get swelling and shedding of the alveolar epithelium, and migration of leucocytes into the alveoli. The inflammatory process in the alveoli is consecutive to the interstitial inflammation.

This peribronchitis is followed not only by an exudation into the alveoli, but also by difficulty of its absorption, because the indurated tissue causes compression of the lymphatics and even complete occlusion. This process is

gradually assumes the thoracic type; the lower part of the thorax, the intercostal spaces, and jugulum are drawn in, while the supramammary and infraclavicular regions are bulging on inspiration. The pulse is rapid—180 to 200—compressible, at times irregular, which fact, combined with somnolence, leads to erroneous conclusion of some brain complication. The pulse is very soft.

Respiration is very characteristic: the inspiration is getting shorter at the expense of expiration; there is a pause after inspiration. The expiration is accompanied by a groan due to involvement of the pleura. The respirations as they increase in number get very shallow and may reach 80 to 100, as observed in a case lately at Dr. Winters's clinic, while the pulse was 180, a ratio sufficiently pathognomonic—1:1.8. The child resents being disturbed for fear that it might excite a cough, which is now very frequent, painful, and troublesome. The expectoration is usually swallowed, and is then vomited or passed by the rectum. It is yellowish-white muco-pus, and may be tinged with blood. Diarrhea is frequently present, which, in my opinion, is due to disturbance of the intestinal tract by the large amount of mucus and consequent acid fermentation.

As long as the inflammation is limited to the bronchial tubes fremitus is normal, but when large portions of lung tissue are involved the fremitus is increased.

The percussion sound is normal in bronchitis. Before consolidation reaches the surface of the lung very light percussion may enable us to diagnose the pneumatic change. It will be of little service if the affected portions are well surrounded by healthy or emphysematous lung.

On auscultation of the small tubes in bronchitis, where there is a great amount of congestion, we get only fine sibilant râles and diminished respiratory murmur, as in asthma, but very soon, sometimes in a few hours, fine subcrepitant and crepitant râles appear which change their location; besides, we hear the concomitant râles of the bronchitis of the large tubes.

If the inflammation has involved only few lobules or is deeply situated, the respiratory murmur grows harsher, gets broncho-vesicular, until eventually, when a considerable portion of a lobe is involved, the breathing is bronchial.

It is very interesting to find in the same lobe healthy, partially involved, and completely solid lung, distinguished by their characteristic physical signs. We see these children in a condition which changes frequently; they may feel fairly well in the early part of the day and be greatly distressed in the afternoon, and especially at night. The state of convalescence is reached by lysis; renewed exacerbation after a period of well-being is indicative of a fresh portion of lung being affected.

This condition may go on, the child getting weaker, the blood becoming oxygenated, until death, preceded by a general convulsion or complete paralysis, brings relief. Or the child may gradually recover after several intervals of improvement were followed by subsiding of fresh portions of lung.

For a short time after recovery from lobular pneumonia there are diminished respiratory murmur and few subcrepitant râles.

THE
NEW YORK MEDICAL JOURNAL.

A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Editorial Office
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 7, 1894.

THE ACTION OF OXALATES ON NERVES AND MUSCLES.

IN the last number of the *Journal of Physiology* there is an interesting article on this subject by Dr. W. H. Howell, of Baltimore. The author has experimented upon frogs and terrapins with a solution containing sodium oxalate applied by irrigation through the capillaries of the nerves and muscles, the oxalate being thus brought into the most intimate contact with the tissue elements. With regard to the nerve fibers, the object of the experiments was mainly to determine the effect of the oxalates upon the nerve current and the negative variation, using these two phenomena as signs of the living structure and irritability of the fibers. In the experiments upon muscle, attention was directed chiefly to the effect of the irrigation upon the irritability of the muscle and its power of entering into the condition of rigor mortis.

The course of an actual experiment is described as follows: The animal was first washed out with normal saline, and then irrigated with the sodium-oxalate solution; when a four-to-one-thousand solution was used, the irrigation was kept up for about an hour. The sciatic nerve of one side was then exposed, and its irritability was tested by stimulation with induction shocks from a Du Bois-Reymond coil; it was then removed and its nerve current and negative variation were determined. The leg from which the nerve had been removed was ligated, its blood-vessels were washed out, and afterward it was irrigated for a number of hours with a solution containing calcium salts. Fifteen experiments were made and the results varied somewhat in character in each experiment, but the main facts were concordant throughout, and the author has reached the following important conclusions: 1. Irrigation of a nerve with a low solution of sodium oxalate destroys completely its irritability toward electrical stimuli. 2. Nerve fibers after irrigation with sodium oxalate lose their demonstrable current more rapidly than the normal nerve. 3. The loss of irritability in the neuro-muscular apparatus affects first the endings of the nerve in the muscle. 4. In the course of the hour, long continued irrigation with a 1/4 to one-thousand sodium-chloride solution will suspend its irritability.

With regard to the action of oxalates upon the muscle, Dr. Howell says that when a low 1/4 to one-thousand solution of sodium oxalate is used, the muscle will enter into the condition of rigor mortis more rapidly than normal, and will also enter into the condition of rigor mortis more rapidly than normal. The author has also found that the muscle will enter into the condition of rigor mortis more rapidly than normal when it is irrigated with a solution of sodium oxalate.

rapidly. In other cases the movements have been much gentler. He has made twelve experiments, and used sodium oxalate in seven, potassium oxalate in three, and ammonium oxalate in two. As to the results of the experiments, he found that in every case the "oxalated" muscle went into rigor mortis, and in every experiment but one it began to shorten before the normal muscle. In the normal muscle the time of the first appearance of rigor mortis varied from sixteen to seventy-eight hours after removal from the body. In the "oxalated" muscle, although rigor had begun earlier, the limits observed were from less than an hour to eighty-eight hours. In the "oxalated" muscle the shortening often began quickly, perhaps immediately, after the muscle had been suspended, but usually this shortening was comparatively slight and soon ceased. The muscle might remain in this condition for a number of hours before the final rigor contraction began. In the normal muscle there was, in some experiments, a slight contraction, followed by a relaxation occurring before rigor definitively set in. The maximum shortening of the "oxalated" muscle was in every case less than in the normal muscle from the same animal, but the difference was often quite small. The energy liberated in the "oxalated" muscle during the onset of rigor was apparently less, so far as the performance of mechanical work was concerned, than in the normal muscle.

In the action of oxalate solutions upon muscle and nerve, Dr. Howell says there are certain points of resemblance which may be mentioned. In each, the irritability is quickly destroyed, but the tissue does not at once entirely lose the structure characteristics of organized matter. This is made probable by the fact that the nerve fiber still shows a demarcation current, and the muscle fiber is still capable of undergoing rigor mortis. The action of the oxalates, however, accelerates in each case the disorganization of the living structure of the tissue; rigor sets in more rapidly in the muscle, and the demarcation current disappears more quickly in the nerve.

Dr. Howell thinks the important fact brought out in these experiments is that the action of oxalate solutions upon skeletal muscle may be carried far enough to completely destroy its irritability toward electrical stimulation without injuring or, at least, destroying its property of entering into the condition of rigor mortis.

MINOR PARAGRAPHS.

A NEW JOURNAL OF ORAL PATHOLOGY.

We have received the first number of the *Journal of Oral Pathology*, edited by Dr. J. E. Williams and published in Madrid. The *Journal* is published monthly, but it does not contain any original papers, or any of the kind of material that is usually found in the *Journal*. It is a journal of the kind of the *Journal*, and it is a journal of the kind of the *Journal*.

THE BILL TO PRODUCE THE SMOKE OF THE ARMY.
MEDICAL NOTES.

Weekly report and analysis of the medical service of the Army, and of the medical service of the Army.

disapproval, is likely to meet with effective opposition in the Senate. No argument thus far advanced in support of it can be called anything but specious.

CARAPA AND CHAULMOOGRA.

We are indebted to the Department of Agriculture for some excellent specimens of photomicrography, by Mr. T. Taylor, showing the seed-fat of carapa and chaulmoogra. Such work is a valuable aid to pharmacology.

ITEMS, ETC.

The Medical Society of the State of West Virginia will hold its twenty-seventh annual meeting at Berkeley Springs on the 10th, 11th, and 12th of July. The programme includes the following papers: A Synopsis of Practical Bacteriology, with Demonstrations, by Dr. J. Schwinn (to be discussed by Dr. E. H. Fravel and Dr. C. O. Henry); Ectopic Gestation; its Early Diagnosis and Treatment, by Dr. S. L. Jepson (to be discussed by Dr. T. A. Harris and Dr. J. H. Brownfield); A Plea for the Old Physician, by Dr. C. F. Ulrich (to be discussed by Dr. L. R. Charter and Dr. T. B. Camden); Antiseptics in Normal Labor, by Dr. W. P. Hogue (to be discussed by Dr. N. D. Baker and Dr. R. W. Hall); A Witness in Court, by Dr. D. P. Morgan (to be discussed by Dr. T. M. Hood and Dr. J. E. Kendall); O'Dwyer's Operation, with Reports of Three Cases, by Dr. R. H. Cummins (to be discussed by Dr. J. Schwinn and Dr. D. P. Morgan); Legislation for the Prevention of Blindness, by Dr. G. A. Aschman (to be discussed by Dr. C. B. Blauhaugh and Dr. V. T. Churchman); The Doctor in Literature, by Dr. J. L. Dickey; On some of the Causes of Heart Diseases of Children, by Dr. L. D. Wilson (to be discussed by Dr. S. L. Jepson and Dr. Harriet B. Jones); and The Influence of Bacteriology upon Surgical Practice, by Dr. R. T. Reed (to be discussed by Dr. W. H. Sharp and Dr. J. M. Staunton). In addition to the foregoing a number of voluntary papers are expected.

The Death of Dr. P. Glennan, of Washington, who is mentioned in *Science*, June 17th, is noteworthy, among other reasons as being that of the last surgeon of United States volunteers to be mustered out of the service and for twenty-six years the executive officer of the Freedman's Hospital. Dr. Glennan was born in New York in 1826. He was the father of Dr. J. H. Glennan, of the same name, and of Dr. A. H. Glennan, of the Marine Hospital Service.

The Death of Dr. Ezra M. Hunt, of Metuchen, N. J., is mentioned in *Science*, June 17th, as being that of Dr. Hunt, a graduate of the College of Physicians and Surgeons, of New York, who is mentioned in *Science*, June 17th, as being four years old.

Army Intelligence. *Official List of Changes in the Staff and Positions of Officers in the Medical Department, United States Army, from June 1st to June 30th, 1894.*

TORNEY, GEORGE H., Major and Surgeon, is relieved from duty at Jefferson Barracks, Missouri, and is ordered to duty at Fort Leavenworth, Kansas, for three months, relieving HARVEY, PHILIP F., Major and Surgeon, who, after being thus relieved, will report to the commanding officer, Plattsburgh Barracks, New York, for duty at that post.

IRWIN, BERNARD, J. D., Colonel and Assistant Surgeon General. By direction of the President, his retirement from active service, June 28, 1894, is announced.

TORNEY, GEORGE H., Major and Surgeon, is relieved from duty as attending surgeon and examiner of recruits at Philadelphia, Pa., and will report in person to the Superintendent of the United States Military Academy, West Point, N. Y., for duty at that post, relieving HARVEY, PHILIP F., Major and Surgeon, who, after being thus relieved, will report to the commanding officer, Plattsburgh Barracks, New York, for duty at that post.

WILCOX, CHARLES, First Lieutenant and Assistant Surgeon, is relieved from duty at Angel Island, Cal., and ordered to the Presidio of San Francisco, Cal., for duty, relieving McVAY, HARLAN E., First Lieutenant and Assistant Surgeon. Lieutenant McVay, on being thus relieved, is ordered to Alcatraz Island, Cal., for duty, relieving RAFFERTY, OGDEN, Captain and Assistant Surgeon. Captain Rafferty, on being thus relieved, is ordered to Benicia Barracks, California, for duty, relieving GIRARD, JOSEPH B., Major and Surgeon. Major Girard, on being thus relieved, is ordered to duty at the Presidio of San Francisco, Cal.

MIDDLETON, JOHNSON V. D., Lieutenant Colonel and Deputy Surgeon General, is relieved from duty at the Presidio of San Francisco, Cal., and will report to the commanding general, Department of California, for duty as medical director of that department, relieving HARTSTUFF, ALBERT, Lieutenant Colonel and Deputy Surgeon General. Lieutenant-Colonel Hartstuff, on being thus relieved, will report in person to the commanding general, Department of the Missouri, for duty as medical director of that department.

LIPPITT, WILLIAM F., Jr., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months, to take effect upon the return of DE WITT, CALVIN, Major and Surgeon, to Fort Leavenworth, Kansas.

Promotions.

WRIGHT, JOSEPH P., Lieutenant Colonel and Deputy Surgeon General, to be Assistant Surgeon General with the rank of Colonel. May 16, 1894.

WOODHULL, ALFRED A., Major and Surgeon, to be Deputy Surgeon General with the rank of Lieutenant Colonel. May 16, 1894.

BELLINGS, JOHN S., Major and Surgeon, to be Deputy Surgeon General with the rank of Lieutenant Colonel. June 6, 1894.

HALL, WILLIAM R., Captain and Assistant Surgeon, to be Surgeon with the rank of Major. May 16, 1894.

TORNEY, GEORGE H., Captain and Assistant Surgeon, to be Surgeon with the rank of Major. June 6, 1894.

Naval Intelligence. *Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 23, 1894.*

WHITE, J. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Lancaster and granted leave of absence for three months.

ANDERSON, E. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Lancaster and granted leave of absence for three months.

SUMNER, T. S., Surgeon. Detached from the U. S. Steamer Alliance and granted leave of absence for three months.

LEE, J. F., Passed Assistant Surgeon. Ordered to the U. S. Steamer New York.

SUMNER, T. B., Surgeon. Detached from the U. S. Steamer Marion and granted leave of absence for three months.

KIRKENDALL, R. M., Passed Assistant Surgeon. Detached from

fluid. Such an operation did no harm and saved several weeks' time. He stated that syringing as a routine measure did more harm than good. If the pus was decomposing it indicated that freer drainage was needed. If strong antiseptic solutions were employed, there was danger of renewed inflammation.

Dr. JOHN E. OWENS, of Chicago, called attention to the necessity, when evacuating pus from the chest or washing out the pleural cavity, of changing the position of the patient during the process in order that all the pus might be removed.

Dr. CHRISTIAN FENGER, of Chicago, considered that there were certain cases in which Schede's operation was required. It was appropriate after milder measures, such as incision, drainage, and Estlander's operation. He reported a successful cure where this operation had been performed after other measures had been resorted to during seven years.

Dr. ROSWELL PARK, of Buffalo, thought that the treatment of empyema should be based upon the same principles as were applicable to other abscesses. In acute cases, where we had to deal with streptococcus and staphylococcus forms of suppuration, it might be sufficient in a few instances to simply aspirate. A large proportion of cases of empyema, however, were essentially cold abscesses—tubercular abscesses. In these cases free incision, free drainage, and excision of a rib were required. In certain cases he had resorted to scraping with the sharp spoon, and in some had cauterized the diseased surface with a fifty-percent solution of chloride of zinc. He reported several cases where death would have occurred had it not been for some such radical operation.

Dr. W. H. CANNON, of New Haven, asked how far it was justified to go in the way of removal of ribs in these cases. He reported a recent case in which he had removed portions of five ribs, the longest piece excised being four inches and a half long. In these cases it was necessary to remove enough of the chest wall to permit of obliteration of the cavity. He had also used the sharp spoon in order to secure a fresh surface.

Dr. M. H. RICHARDSON, of Boston, said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former condition there was an abscess with rigid walls. With regard to drainage, he stated that in these cases it was not sufficient to connect the abscess with the outside by a tube, but that it was necessary to make it impalpable and apt to cause increased trouble, for when the tube was removed the fluid would flow back, making a vacuum established and the valve was held against the chest wall, preventing drainage. He stated that he had sometimes used a rubber tube, but that he had found it better to use a tube of india-rubber, and that he had found that the tube of india-rubber was better than the tube of rubber. He stated that he had found that the tube of india-rubber was better than the tube of rubber. He stated that he had found that the tube of india-rubber was better than the tube of rubber.

Dr. J. H. MANNING, of Boston, said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former condition there was an abscess with rigid walls. With regard to drainage, he stated that in these cases it was not sufficient to connect the abscess with the outside by a tube, but that it was necessary to make it impalpable and apt to cause increased trouble, for when the tube was removed the fluid would flow back, making a vacuum established and the valve was held against the chest wall, preventing drainage. He stated that he had sometimes used a rubber tube, but that he had found it better to use a tube of india-rubber, and that he had found that the tube of india-rubber was better than the tube of rubber.

Dr. J. H. MANNING, of Boston, said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former condition there was an abscess with rigid walls. With regard to drainage, he stated that in these cases it was not sufficient to connect the abscess with the outside by a tube, but that it was necessary to make it impalpable and apt to cause increased trouble, for when the tube was removed the fluid would flow back, making a vacuum established and the valve was held against the chest wall, preventing drainage. He stated that he had sometimes used a rubber tube, but that he had found it better to use a tube of india-rubber, and that he had found that the tube of india-rubber was better than the tube of rubber.

many of these cases the pus was simply a pure culture of the pneumococcus. In the adult we rarely saw the pneumococcus form, but there was a mixed infection. If the empyema was of the anaerobic form, the patient would die. If empyema was due to the streptococcus, the odor was offensive and the cavity needed to be washed out carefully. If empyema was due to the staphylococcus, washing out was not required. Where there was time, he preferred to withdraw some of the fluid with the hypodermic syringe and have it submitted to bacteriological examination. While he used ether in general work, in these cases he preferred the use of a few whiffs of chloroform, which appeared in these cases to have a peculiarly happy effect. Only a very small quantity was employed. The employment of respiratory gymnastics was of much benefit in favoring the expansion of the contracted lung.

Dr. JAMES MCFADDEN GASTON, of Atlanta, referred to the natural tendency of the empyemic cavity to open spontaneously in the anterior part of the chest. He reported two cases in which this spontaneous opening had occurred and been followed by recovery.

(To be continued.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of May 9, 1894.

Ascitic Distention of the Abdomen mistaken for Pregnancy.—Dr. T. RIDGWAY BARKER reported the following case in order to prove the importance, if not absolute necessity, of making a careful and thorough examination of all women supposed to be pregnant before committing ourselves to a positive diagnosis:

In June, 1891, he first saw the patient, Mrs. M. N.; she was then eighteen years of age, white, and the mother of two children. There had been no history of any miscarriages. Her general health had been good, and her condition favorable for the development of the product of conception which she believed was present, menstruation having ceased in October of the preceding year. Inquiry had elicited the fact that her menstrual flow up to that time had been perfectly regular and unaccompanied by pain. Morning sickness had proved very annoying for the first three months, but later had passed away.

From inspection, abdominal palpation, and digital vaginal examination, the patient had been judged to be some six months pregnant, and the date of confinement set for the early part of August. On July 27th the speaker had attended Mrs. N., delivering her of a fine male infant which presented by the vertex.

Labor had been accomplished without incident or difficulty, and the lying-in period had presented no symptoms suggestive of any serious lesion of the foetus. In fact, it was fair to assume that at that time there did not exist any disease of that excretory organ.

The postpartum condition had been good immediately after delivery, but the first menses had not been taken.

He had visited Mrs. N. the next day, when attendance was also called for, as the patient had been able to be up and move about freely. Mrs. N. had not been seen again by him for over two years, when she had called at the dispensary and stated that she had been in the city, but that she had suffered from a peculiar condition.

She stated that she had passed the previous menses, and that she had been in the city, but that she had suffered from a peculiar condition. She stated that she had passed the previous menses, and that she had been in the city, but that she had suffered from a peculiar condition.

not at all rare. Examination had shown the abdomen distended to the size of normal pregnancy. The uterus had been slightly hypertrophied and was three inches in length. It had been evident that the distention had been due to gas and that she had not been pregnant at full term. The woman could not be convinced that this was the case until, under appropriate treatment, the size of the abdomen had been reduced.

Dr. JAMES MITCHELL recalled a case which had occurred at the Philadelphia Hospital in a single woman who had desired to become pregnant that she might hold the man responsible. The woman had sworn that she was pregnant, but to make sure he had given her ether, and under the anæsthetic the distention had disappeared. The enlargement had been due to tympanites and no distention of the bladder in part.

A New Method for Reduction of Fractures of the Lower End of the Radius.—Dr. THOMAS S. K. MORTON read a paper with this title, and said that the particular method of reducing fractures of the lower end of the radius had proved so satisfactory during the past few years in his services at the Pennsylvania and the Polyclinic Hospitals and elsewhere, and in the hands of others to whom he had from time to time demonstrated it, that he now felt justified in giving to it wider publicity. The method was as follows:

The surgeon stood in front of the patient and interlaced his fingers beneath the supinated wrist and palm of the injured member, so that his two index fingers lay parallel crosswise beneath the lower end of the upper fragment of the radius. The palms of the surgeon's hands were then closed in upon the thenar and hypothenar portions of the patient's hand respectively, while the surgeon's thumbs rested parallel lengthwise upon the upwardly displaced lower fragment of the radius. The parts were thus firmly grasped by the surgeon while the following movements were made: The patient's wrist was excessively extended by carrying his hand upward. When superextension had thus been secured, the surgeon made powerful traction upon the wrist in the line of superextension. While this traction was maintained the hand was suddenly carried into full flexion, and at the same time powerful downward pressure upon the upwardly displaced lower fragment of the radius was made by the surgeon's thumbs opposed by the interlaced index fingers beneath the lower end of the upper fragment.

The excessive extension of the first portion of the movement had always, so far in the speaker's experience, loosened or disentangled the displaced lower fragment, while the subsequent traction, flexion, and direct thumb pressure had not yet failed to accurately force the lower fragment into its proper position.

Dr. Morton said that he would be gratified to have reports of the experience of others who might be tempted to employ the method here put forth.

By practicing the method upon a normal wrist a sufficient degree of expertness could readily be acquired; by it joint crepitation could be brought out in any wrist. It was well, however, not to practice too much or too often upon the same extremity, as excessive stirring up of the joint contents might originate a synovitis.

Dr. Morton said that he would be gratified to have reports of the experience of others who might be tempted to employ the method here put forth.

By practicing the method upon a normal wrist a sufficient degree of expertness could readily be acquired; by it joint crepitation could be brought out in any wrist. It was well, however, not to practice too much or too often upon the same extremity, as excessive stirring up of the joint contents might originate a synovitis.

Dr. Morton said that he would be gratified to have reports of the experience of others who might be tempted to employ the method here put forth.

By practicing the method upon a normal wrist a sufficient degree of expertness could readily be acquired; by it joint crepitation could be brought out in any wrist. It was well, however, not to practice too much or too often upon the same extremity, as excessive stirring up of the joint contents might originate a synovitis.

Dr. Morton said that he would be gratified to have reports of the experience of others who might be tempted to employ the method here put forth.

he anæsthetized before making any effort at reduction. The new method might then first be resorted to, and would often be found the best means of performing both refracture and reduction.

For making a diagnosis he had also found a modification of this method most useful. If the surgeon would take the hand and wrist in which fracture was suspected into his hands, as above described, and, while the thumbs pressed firmly upon the lower end of the radius or first row of the carpus, make a series of gentle, quick, short flexions and extensions of the joint, rocking it through an arc of perhaps twenty-five or thirty degrees above and below the forearm as a horizontal plane, he would be astonished at the ease with which crepitus of the bones of the joint, and of any small or large bony or cartilaginous fragment, would be elicited. And, best of all, the diagnosis of these obscure fractures about the wrist would thus, after some practice, be brought out without giving unbearable pain to the patient. Indeed, he had often in this way, by the most gentle and practically painless manipulation, been able to clear up the nature of intricate injuries about the wrist.

By practicing the method upon a normal wrist a sufficient degree of expertness could readily be acquired; by it joint crepitation could be brought out in any wrist. It was well, however, not to practice too much or too often upon the same extremity, as excessive stirring up of the joint contents might originate a synovitis.

Dr. Morton said that he would be gratified to have reports of the experience of others who might be tempted to employ the method here put forth.

Book Notices.

A Text-book of the Physiological Chemistry of the Animal Body, including an Account of the Chemical Changes occurring in Disease. By ARTHUR GAMGEE, M.D., F.R.S., Emeritus Professor in the Owens College, Victoria University, Manchester, etc. With Two Chromo-lithographic Charts by Spillion and Wilkinson. Vol. II. *The Physiological Chemistry of Digestion*. London and New York: Macmillan & Co., 1893. Pp. xix+4 to 528. [Price, \$4.50.]

The first volume of this work was published fourteen years ago, and dealt with the physiological chemistry of the elementary tissues of the animal body, including the blood, lymph, and chyle. This volume considers the physiological chemistry of the digestive processes, including saliva and its actions upon food; gastric digestion; pancreatic digestion; the bile and the phenomena of heterogenic poisonous agents, including the composition and analysis of biliary calculi; and the intestinal canal and its secretion, as well as the chemical processes that have place in the intestine.

The author states that the book is based on an original study of the whole literature of the subjects treated of, and in the writing he has taken the standpoint of a scientific chemist, but that of a physiologist who has paid special attention to those subjects that are of interest to the pathologist, the pharmacologist, and the clinician.

In the chapter on saliva the author reviews the catalysis of the salivary glands, the function of the catalytic process, and the nature of the salivary glands, and others that have developed the present physiological theory. He describes the histology of the salivary glands, the chemical composition of saliva, and the action of the salivary glands on the food.

et 47 figures dans le texte. Paris: G. Masson, 1894. Pp. viii-48.

Manuel du médecin praticien. La pratique des maladies de l'estomac et de l'appareil digestif dans les hôpitaux de Paris. Aide-mémoire et formulaire de thérapeutique appliquée par le Professeur Paul Lefert. Paris: J. B. Baillière et fils, 1894. Pp. 7 to 228. [Prix, 3 fr.]

Les Universités des États-unis et du Canada, et spécialement leurs institutions médicales. Par le Dr. O. Laurent, agrégé suppléant à l'Université de Bruxelles. Vingt-deux figures et plans. Bruxelles: H. Lamertin, 1894. Pp. 13-14 to 311.

La Paralyse générale. Par V. Magnan, Médecin de l'asile Sainte-Anne, etc., and Paul Sériex, Médecin-adjoint à l'asile de Villejuif. Paris: G. Masson, 1894. Pp. 5 to 193. [*Encyclopédie scientifique des aide-mémoires*.]

Régénération des os et réssections sous-périostées. Par L. Ollier, Correspondant de l'Institut, etc. Paris: G. Masson, 1894. Pp. 5 to 180. [*Encyclopédie scientifique des aide-mémoires*.]

Examen et séméiotique du cœur. Signes physiques. Par le Dr. Pierre Merklen, Médecin de l'hôpital Saint-Antoine. Paris: G. Masson, 1894. Pp. 5 to 256. [*Encyclopédie scientifique des aide-mémoires*.]

A Method of Performing Rapid Manual Dilatation of the Os Uteri, and its Advantages in the Treatment of Placenta Prævia. By Philander A. Harris. [Reprinted from the *American Journal of Obstetrics*.]

Contribution à l'étude du beriberi. Par le Dr. G. Nepveu. Paris. [Extrait du *Musée médical*.]

Fourth Annual Report of the Eye, Ear, Nose, and Throat Hospital of New Orleans. January 1, 1893, to December 31, 1893.

Transactions of the Indiana State Medical Society. 1893. Forty-fourth Annual Session held in Indianapolis, Ind., May 11 and 12, 1893.

Enormous Oval Hemorrhoid encircling the Anus. Whitehead's Operation; Entire Cure. By W. W. Keen, M. D., of Philadelphia. [Reprinted from the *Therapeutic Gazette*.]

Operation Wounds of the Thoracic Duct in the Neck; with a Review of the Two Prior Recorded Cases and Two Additional Cases. By W. W. Keen, M. D. Read before the Philadelphia Academy of Surgery.

Removal of the Gasserian Ganglion as the Last of Fourteen Operations in Thirteen Years for Tic Douloureux. By W. W. Keen, M. D., and John K. Mitchell, M. D. [Reprinted from the *Transactions of the Philadelphia County Medical Society*.]

Dissection of the Common and External Carotid Arteries and the Jugular Vein for the Anatomical Anatomy of the Internal Carotid and Jugular, with Division of the Optic Nerve of the Opposite Side, the Result of a Gunshot Wound. By W. W. Keen, M. D. Read before the Philadelphia Academy of Surgery.

Chloroform and Fatal Hospital Cases of Anæsthesia. By J. M. Smith, M. D., of Chicago. Written for the Fourth International Medical Congress held in Rome, 1894.

On the Use of the Laryngoscope. By W. J. Jones, M. D. [Reprinted from the *Medical Record*.]

On the Use of the Laryngoscope. By W. J. Jones, M. D. [Reprinted from the *Medical Record*.]

On the Use of the Laryngoscope. By W. J. Jones, M. D. [Reprinted from the *Medical Record*.]

Two Cases of Brain Tumor: A Contribution to Cerebral Surgery. By Clarence Bartlett, M. D., and W. B. Van Lennep, M. D. [Reprinted from the *Hahnemannian Monthly*.]

A Contribution to the Pathology of Friedreich's Ataxia. By Charles W. Burr, M. D. [Reprinted from the *University Medical Magazine*.]

An Illustrated Dictionary of Medicine, Biology, and Allied Sciences, including the Pronunciation, Accentuation, Derivation, and Definition of the Terms used in Medicine, Anatomy, Surgery, Obstetrics, Gynecology, Therapeutics, Materia Medica, Pathology, Dermatology, Paediatrics, Ophthalmology, Otology, Laryngology, Physiology, Neurology, Histology, Toxicology, Dietetics, Legal Medicine, Psychology, Climatology, etc., and the Various Sciences closely allied to Medicine: Bacteriology, Parasitology, Microscopy, Botany, Zoology, Dentistry, Pharmacy, Chemistry, Hygiene, Electricity, Veterinary Medicine, etc. By George M. Gould, A. M., M. D. Based upon Recent Scientific Literature. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xvi-17 to 1633.

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1892. London: H. K. Lewis, 1894. Pp. viii-5 to 378. [Price, 2s. 6d.]

Resoconto clinico triennale della sezione chirurgica dell'ospedale infantile Regina Margherita in Torino per gli anni 1891, 1892, 1893. Dott. Annibale Nota, Chirurgo Primario. Torino: Tipografia Salesiana, 1894. Pp. 208.

Ueber Tolypyrin und Tolsal. Von Dr. Moritz Korner in Berlin. [Separat-Abdruck der *Wiener medizinischen Blätter*.]

Biography of Eminent American Physicians and Surgeons. Illustrated with Fine Photo-engraved Portraits. Edited by R. French Stone, M. D., Consulting Physician to the Indianapolis City Hospital and Dispensary, etc. Indianapolis: Carlton & Hollenbeck, 1894. Pp. xxii-729. [Price, \$8.]

Reports on the Progress of Medicine.

THERAPEUTICS.

By HENRY A. GRIFIN, M. D.

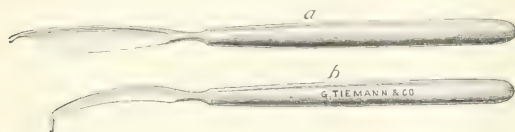
The Treatment of Migraine.—H. Gradle (*Medical News*, March 3, 1894, p. 230) believes astigmatism to be the commonest cause of migraine, correction by glasses generally resulting in permanent cure. Next in frequency as producing migraine comes nasal disease, generally unilateral stenosis, to be treated naturally by removal of the obstruction. Intestinal catarrh seems to cause a smaller number of cases and yields to treatment chiefly dietetic and hygienic. Overwork sometimes bears a relation to the attacks which rest will remove.

In fewer than one half his cases no peripheral cause could be found. "Of drugs, methods cannot as often be the most reliable, from one fourth to one third of the cases receiving permanent benefit from the use, immediately of the cause of the migraine. Hering's extract is the most reliable preparation of the drug. If the drug proves effective it continued use twice daily will prevent a return of the attacks, and if persisted in for months often effect a permanent cure. Other drugs he thinks generally useless. He usually treats the patient to relieve the attack, "it can be treated almost immediately by the use of Hering's extract."

The Treatment of Myxœdema by Thyroid Extract.—

Haring (*Medical News*, March 3, 1894, p. 230) reports that he has treated by this extract five or six in the fourth of a study of the disease, and that the results are satisfactory. The prepa-

jecting about a quarter of an inch, and somewhat curved toward the blade (see *a*). In the case of the curved bistoury the beak meets the rest of the instrument at an obtuse angle (see *b*).



I have used this knife to open the sheaths of veins and arteries for ligation in the continuity and in amputations; also in opening the abdominal cavity, and in the excision of glands from the neck. In certain cases the beak takes the place of a grooved director. This instrument is made by George Tiemann & Co.

Miscellany.

Professional Remuneration.—The *Lancet* for June 2d contains a report of an address on this subject which was delivered before the Southwest London Medical Society by Dr. W. G. Dickinson, of London. The author thinks that, with regard to professional remuneration, there is one remedy without which all others are useless, and that is unity among physicians; this once attained, he says, the rest is comparatively easy.

The chief methods of professional remuneration now in vogue are the ready-money system, the rendering of quarterly, half-yearly, or annual accounts, and the contract system in its various forms—viz., public appointments, private appointments to clubs, etc., by the acceptance of which a practitioner becomes the servant of a lay committee, medical associations the members of which pay regularly into a fund for the remuneration of the medical attendants, and direct private contract between practitioner and patient.

The disadvantages of the ready-money system are the inconvenience to the patient of having to keep the exact amount ready for the daily visit, and the unpleasantness to the physician of having to demand his payment of his fee on each occasion. But, as usual, he says, the author says, this is the simplest and least objectionable system, and the fee charged is an adequate one.

The contract system, he says, is as well as it looks, and the author thinks it may be reasonably and profitably adopted without loss of professional self-respect. In public appointments much could be done to raise the general estimation of professional services by increasing the salaries attached to them. Private appointments, however, are dependent both on the estimation of the general public and on the estimation of those to whom they are made. With regard to the question of the payment of a fixed amount for the services of the medical attendant, he says, "The only remedy for the present state of things will be to make the medical profession a body of men who will not be satisfied with the payment of a fixed amount for the services of the medical attendant, but who will be satisfied with the payment of a fixed amount for the services of the medical attendant, and who will be satisfied with the payment of a fixed amount for the services of the medical attendant." The author thinks that the only remedy for the present state of things will be to make the medical profession a body of men who will not be satisfied with the payment of a fixed amount for the services of the medical attendant, but who will be satisfied with the payment of a fixed amount for the services of the medical attendant, and who will be satisfied with the payment of a fixed amount for the services of the medical attendant.

without sacrificing independence or infringing any principle of medical ethics are as follows: 1. The management must rest with the medical staff, the members being only consulted. 2.

Any physician living in the district, who is not employed by a medical association managed by laymen, should be at liberty to join the staff. 3. The membership should be strictly limited to those who are unable to pay the minimum professional fee of the district. 4. Control should be maintained by the staff over all collectors and agents in order to prevent any soliciting for members. 5. The fees payable should be such as in the aggregate to be fairly remunerative for the work done.

The author says that he does not know of any society that quite comes up to this ideal, but, he adds, it is by no means an impossible one, and he believes that a society managed in this way would bring in better fees than could be obtained from the same class on any other system, and it would not injure other practitioners in the neighborhood.

In direct private contract, it has been suggested that the patients should pay by the year. The advantages to them would be: 1. The medical bill would be avoided. 2. The principle of mutual assurance would come into play, and those who escaped much illness in any given year would help to pay for those who might have much sickness. 3. There would then be no reason for that delay in sending for the physician which now too often occurs and frequently leads to such serious results; the direct benefit to the public health would thus be very great. With regard to the annual retaining fee, it should bear a relation to the fee otherwise charged, and would not, of course, include confinements, serious operations, night visits, or consultations. In addition to the actual increase of the income derived from the adoption of this system, there would be the further advantage of the regularity of the receipts. The author thinks that there is nothing in such an arrangement which would impair the confidential relations that ought to exist between the physician and his patient. Interest and duty, he says, ought to coincide, but under the present system they often conflict. Physicians never hesitate in their preventive efforts, and it is hard that they should suffer in direct proportion to their success. It would, of course, he says, be absurd to expect that this form of contract would ever entirely supersede the present system, but he thinks that fifty or a hundred patients making fixed annual payments would form an excellent basis for any practice, and would be an advantage to both physician and patient.

The Use of Erysipelas Toxines in the Treatment of Malignant Disease.—The July number of the *American Journal of the Medical Sciences* continues the account of observations of this plan of treatment, and gives the following conclusions:

1. The curative action of erysipelas upon malignant tumors is an established fact.
2. This action is much more powerful in sarcoma than in carcinoma.
3. This action is chiefly due to the toxines of the erysipelas streptococci, which may be isolated and used with safety.
4. The results are greatly increased by the addition of the vaccine of *Janthinoplasma*.
5. The toxins to be of value should come from virulent cultures and should be freshly prepared.
6. The results obtained from the use of toxines without direct erysipelas are less than those obtained from an attack of erysipelas that reaches the malignant tumor.

Urethral Injections.—In the last number of the *Annals de médecine*, the author writes that there is an article by

The Relation of Slight Degrees of Albuminuria to Life Insurance. By G. S. Farrow. *Annals of the American Association of Life Actuaries*, 1910, 11, 1, 1-10.

Dr. Poore states that the death-rate from urinary diseases is varying from 100 to 150 per 100,000. See *Ann. Intern. Med.* 1914, 10, 103. A part of the reason for this is the change in the nomenclature, but he thinks that it is just as due to the fact that the term "urinary diseases" has been used for everything. *Quincy, Conn.* The author of the book, which comprises 200 pages, contains 100 illustrations, is Dr. Poore, and costs \$3.00, including postage.

Original Communications.

A CASE OF
SUBACUTE UNILATERAL BULBAR PALSY,

WITH AUTOPSY.*

By ALFRED WIENER, M. D.,

LECTURER ON MENTAL AND NERVOUS DISEASES, NEW YORK POLYCLINIC;
VISITING PHYSICIAN TO
THE NEUROLOGICAL DEPARTMENT OF THE SINAL HOSPITAL DISPENSARY.

A bulbar palsy of a bilateral type, taking either a subacute or a chronic course, is not a rarity. But when we come to examine the literature upon this subject, with reference to cases of a unilateral type, we find but few on record. Such have been reported by Pel (1), Ballet (2), Erb (3), Remak (4), Hirt (5), and a few others.

Ever since the year 1860, when Duchenne published his study on Progressive Glosso-labial-pharyngeal Palsy, more or less interest has been shown in regard to this subject. In 1870, Charcot and Leyden made known to us their views and established the fact that this disease was due to a chronic degeneration of the motor nuclei in the floor of the fourth ventricle. A few years later Joffroy (6) discussed another type of bulbar disease, quite distinct from the above, which he called pseudobulbar palsy. Very soon afterward Jolly (7) reported a most interesting case, with autopsy, of the pseudobulbar type, and now the literature abounds in the records of such cases. Among these are cases of Lepine (8), Eisenlohr (9), Oppenheim and Siemering (10), and Ross (11).

I do not hesitate to add my case to the list of bulbar palsies, as the subject is still novel enough to warrant the description of every case in which a post-mortem examination helps to elucidate the clinical features of these palsies.

By the term progressive bulbar palsy we of course understand a paralysis of the lips, tongue, palate, and throat muscles, due to a degeneration of the nuclei within the medulla which give origin to the nerves which supply these parts.

The division of bulbar palsies into acute or apoplectic-form (Leyden and Senator), subacute (Erb), and chronic (Erb, Duchenne, Wachsmuth) is the classification most generally followed now by our best authors, and I think it still answer for our unilateral cases as well.

In these unilateral cases the combination of symptoms varies: There may be present only a simple hemiatrophy and hemiparalysis of the tongue, with or without a hemiparalysis of the palate, pharynx, and throat muscles. It seems, however, that in all these cases the hemiatrophy and paralysis of the tongue are the most prominent symptoms, but those which give the patient the least annoyance. In former times this especially interested the anatomists, and it seemed to occur frequently with tabes dorsalis, many authors, Ballet (12) among them, were of the opinion that it was extremely rare to find this condition without tabes dorsalis. Erb and Strömper, most correctly, then, presented the case of a patient, and proved by their enumeration and discussion of

individual cases that this symptom could not be considered a pathognomonic sign, but that it occurred often enough to necessitate, in such cases, an examination for other symptoms of tabes. Hirt states that most of the German authors up to 1885 considered a hemiatrophy of the tongue as a positive pathognomonic sign of tabes.

The case which I propose to discuss this evening is one which I presented before this society about nine months ago and it now claims our especial attention for the following reasons: 1. It is a case of subacute unilateral bulbar palsy verified by an autopsy. 2. Since so much ambiguity still exists with reference to the exact anatomical lesion which produces bulbar palsies, a statement of the facts in this case may throw a little more light upon this region of the brain in question. 3. The grouping together clinically of symptoms which result from an affection of these parts which naturally functionate together seems to me to be of great importance in arriving at a correct solution in regard to an anatomical diagnosis.

The patient, M. E., seventeen years old, was born of healthy parents. Found history negative. His mother is living and enjoying good health. His father died a short time ago with Bright's disease. The family history is negative with respect to any hereditary nervous disease. Patient has always been in good health up to two years ago, when he was taken down with a severe attack of paratyphoid, from which he recovered, however, after five weeks of illness. He had suffered from catarrhal pharyngitis more or less ever since childhood. Two years ago last spring the sterno-cleido-mastoid sides of his neck, in the region of the sterno-cleido-mastoid muscles, began to change. In the summer of the following year (1892) an abscess formed in one of these glands on the right side, and had to be drained. After this the remaining glands began to create so much discomfort for the boy that after a week's endeavor, on August 17, 1892, the glands on the right side, together with a large portion, as it seems, of the sterno-cleido-mastoid muscle, were excised at Mount Sinai Hospital. On September 1 of the same year a second operation was performed and the glands on the left side were removed. These glands were examined by Dr. L. Stieglitz and found to be of tubercular nature. The patient rapidly recovered, and nothing was noticed by the doctor as the cause of the parts which might have been situated in the operation. He was most frequent in his presence at school, during the latter part of November, Dr. Friedenburg, who had taken charge of the case, presented, on asking the parents to state his history, that the boy had been in the hospital, on this condition the patient was not at all aware until he was freed of it. Shortly after this the patient was again taken to the hospital, on account of the same trouble, and was again operated on. At this time the patient was not at all aware until he was freed of it. It was in this condition that he was sent to Dr. Sachs's department at the New York Hospital. A post-mortem examination brought out the following points: 1. Very marked deviation of the tongue to the right side and protruded. 2. Considerable atrophy of the right side of the tongue, especially of the posterior part, and of the left side of the tongue, especially of the anterior part. 3. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 4. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 5. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 6. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 7. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 8. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 9. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 10. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 11. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 12. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 13. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 14. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 15. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 16. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 17. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 18. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 19. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 20. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 21. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 22. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 23. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 24. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 25. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 26. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 27. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 28. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 29. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 30. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 31. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 32. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 33. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 34. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 35. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 36. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 37. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 38. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 39. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 40. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 41. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 42. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 43. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 44. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 45. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 46. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 47. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 48. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 49. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 50. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 51. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 52. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 53. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 54. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 55. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 56. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 57. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 58. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 59. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 60. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 61. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 62. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 63. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 64. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 65. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 66. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 67. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 68. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 69. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 70. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 71. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 72. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 73. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 74. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 75. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 76. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 77. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 78. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 79. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 80. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 81. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 82. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 83. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 84. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 85. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 86. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 87. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 88. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 89. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 90. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 91. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 92. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 93. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 94. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 95. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 96. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 97. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 98. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 99. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied. 100. The right side of the tongue was found to be atrophied, and the left side of the tongue was found to be atrophied.

* Read before the New York Neurological Society, December 1, 1893.

because the sterno-cleido-mastoid and trapezius muscles were involved, and the nerve branches supplying these muscles were close together on the surface, while the nuclei were some distance apart and could not be covered by a small lesion, the lesion was on the surface of the medulla.

Dr. B. Sachs (14) also mentions the fact that deposits either of a syphilitic or tubercular nature at the base of the skull may call forth palsies of the various cranial nerves, and in several of the cases cited I noticed that he records an involvement of the hypoglossal and vago-accessorius roots.

Now, as regards my own case, although we had a disturbance of the upper portion of the trapezius and of the sterno-cleido-mastoid muscles, which disturbance was accounted for in a satisfactory manner, I did not believe that the lesion in this case was confined to the surface of the medulla. For a lesion of such a nature as the one I supposed this one to be would have produced in this locality much more serious trouble than existed in this patient. There was no progression, nor were there any other symptoms present than those which I found at the first examination. Thus, from the general course of the disease, together with the symptoms present and cranial nerves involved, I excluded the surface of the medulla.

This brought us to the consideration of the only other possible localization of the lesion—viz., in the nuclei of the nerves which govern these palsied parts. These groups of cells form the conjoined nuclei of the spinal accessory, vagus, hypoglossal, and glosso-pharyngeal nerves, and only a very limited localized lesion in this part of the medulla is sufficient to affect them. All the facts in the case lent their support to this view. The onset, which was subacute, the slow course of the palsy—viz., one nerve after the other becoming involved, and just those parts becoming palsied which usually functionate together—and then the slight electrical changes, together with the exclusion of the only two other possible places where the lesion might have occurred, all this pointed to the bulbar nuclei as the probable seat of disease.

As regards the nature of the lesion I reasoned thus: A boy, seventeen years old, healthy in every respect up to the time that he was taken sick, shows marked scrofulous disposition, and has a mass of tubercular glands on both sides of the neck. This aroused the suspicion that the lesion in the medulla might be tubercular, and a solitary tubercle in the region of the nuclei would explain all the symptoms. I thought that this would be the case; in this I was mistaken.

Autopsy.—This was made six hours after the death of the patient.

Roof of skull was normal. Dura was fairly thick in places. Pia was smooth and delicate. No extra-membranous growths to be found.

Brain of base.—Pia delicate and adherent; gray and white from coloration.

Cranial nerves removed normal.

Medulla.—To all external appearance that was normal in form and not at all abnormal. It was neither too soft nor too hard. There was nothing unusual in the fourth ventricle. Stria medullaris appeared as thoroughly developed. No haem-

orrhages and no exudation. Cerebellum normal in appearance. Surface of brain: Cortex was a little pale. Hemispheres were normal. I made a few cuts through the pons and medulla in the fresh state, but saw nothing in the way of a hyperemia, softening, or doubtful coloring. The gray substance was strongly in contrast with the white. Blood-vessels all appeared natural to the naked eye. I placed the complete brain in Muller's fluid and allowed it to harden for microscopic examination.

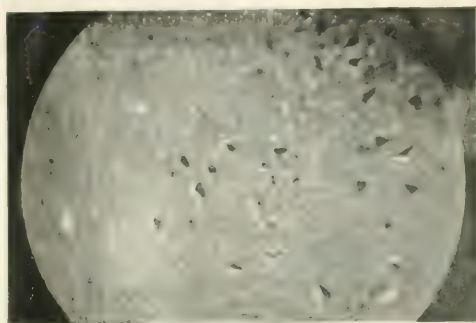


FIG. 1. Histological section showing a transverse section through the speech center, revealing nothing abnormal. Internal capsule likewise was found in normal condition.

Microscopic examinations.—Transverse section through the speech center revealed nothing abnormal. Internal capsule likewise was found in normal condition.

The cruri cerebri were perfectly normal in appearance.

Third nerve nuclei also normal.

Sixth and seventh nerve nuclei normal.



FIG. 2. Histological section showing a transverse section through the posterior longitudinal fasciculus, revealing nothing abnormal.

The posterior longitudinal fasciculus was normal in appearance and well marked.

Transverse section through the cerebellum and vermis showed normal. The entire cerebellum, including the vermis and the cerebellar peduncles, was normal in appearance. No softening or other abnormality was found.

As a result of the study of the brain, it was found that the right side of the brain was normal in appearance, and the left side of the brain was normal in appearance. The entire brain was normal in appearance. No softening or other abnormality was found.

outer part of the respiratory column, which appears to be affected in the degeneration. As we examine the sections from above downward, we observe a degeneration on the right side of the vagus, hypoglossal, and vago-accessorius nuclei, together with the completely diseased respiratory column. (See Fig. 4.) The vagus appears only very slightly affected, but the hypoglossal is diseased in a very marked degree. The ganglion cells are very much diminished in number, are abnormally rounded, and with but few cell processes left. They are in a very much atrophied state, shrunken and granular in appearance. Few that are left have any nucleolus present in their



FIG. 4. Section of 2 mm. area of

cell column. The greater substance does not seem to stain as readily as the right side, as it does on the left, and appears to be less compact.

The nuclei of the vagus and Rober's hypoglossal nucleus appear natural. The degeneration extends on the right side down to the first dorsal of the hypoglossal nucleus, and is

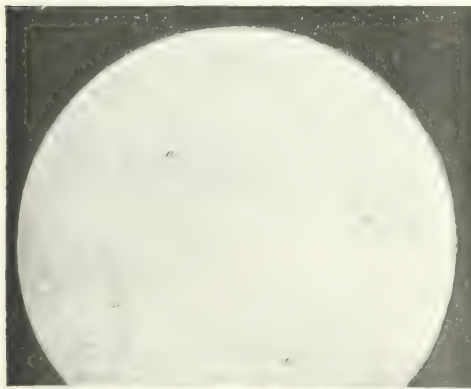


FIG. 5. Section of 2 mm. area of

respiratory column. The greater substance does not seem to stain as readily as the right side, as it does on the left, and appears to be less compact.

and 2.) Again, the respiratory bundle appears degenerated in its lower and outer parts throughout its entire course (see Fig. 5), except in the region of the ninth nerve, as above mentioned. The vagus nucleus on the left side does not stain very readily and appears slightly degenerated.



FIG. 5. From same specimen as Fig. 4, left side. *a*, margin of bundle; *b*, degenerated lower and outer portion of column.

An examination of the intramedullary roots shows them to be decidedly less prominent and much thinner on the right side than on the left.

Thus, summing up all these facts of the microscopical examination, we find:

First. The motor cortex, internal capsule, crura cerebri, and pons of normal condition. The nucleus of the twelfth nerve on the right side very much diseased, while on the left side only in a slight degree. The nuclei of the tenth, eleventh—viz., vago-accessorius—slightly affected; a little more on the right side than on the left. The nucleus of the ninth on the right side only very slightly affected. The respiratory bundle appears completely degenerated on the right side, while on the left, in the region of the hypoglossal nucleus, only its lower and outer portions are diseased. In the region of the ninth nerve a few fibers are affected in this lower and outer portion.

The intramedullary roots of the ninth, vagus, vago-accessorius, and hypoglossal nerves are less prominent on the right side than on the left. Otherwise everything appears to be perfectly natural up to the exit of the first cervical nerve in the spinal cord.

Let us now review the clinical symptoms in the light of the autopsy. Within a space of ten days this patient developed a complete unilateral palsy of the right side of his tongue, soft palate, pharynx, and right recurrent laryngeal nerve. There was no disturbance of his respiratory or cardiac organs, or any other conditions present which should have called our attention to the affection of any other cranio- or spinal nerve, except that of the ninth, tenth, eleventh, and twelfth nerve.

We find, on microscopical examination, a marked degeneration of the nucleus of the hypoglossal nerve on the right side, together with slight degeneration in the adjacent

nuclei, also a completely degenerated respiratory bundle. How is this to be explained?

It is unfortunate that authors still differ as to the interpretation to be given to these nuclei, more particularly those of the spinal accessory and glosso-pharyngeal.

Lockhart Clarke (16) remarks that the spinal accessory consists of two roots: a lower one, whose rootlets are collected into an external branch and supply the sterno-cleido-mastoid and trapezius muscles; an upper one, whose rootlets are collected into an internal branch, which joins the pneumogastric and is distributed to the larynx, pharynx, and palate. This has been proved beyond a doubt by the experiments of Reid (17), Bischoff (18), Bernhard and Beevor, and Horsley (19).

The lower roots arise with the spinal nerves from the anterior horns of the spinal cord, in the region of the cervical and upper brachial nerves. The upper roots have a double origin: first, from their own special nucleus, continuous behind the central canal with that of the pneumogastric, and the others from the proper nucleus of the hypoglossal nerve in front of the canal.

This close anatomical connection between vagus, spinal accessory, and hypoglossal nerves Clarke considers of the highest importance in regard to the light which it throws on the complex and associate movements concerned in deglutition, vocalization, and articulation. He suggests that these nuclei are the center for combined movements of these nerves.

It is just in this region that the lesion is localized in my case, with the additional involvement of the respiratory bundle, which does not appear to be mentioned in other cases as a natural consequence of disease of the hypoglossal nucleus (Turner) (20).

As the autopsy proves that the hypoglossal, vagus, and the *vago-accessorius* nuclei, together with the respiratory column, were diseased, and if it is furthermore true that the respiratory column contains root fibers from the vagus, *vago-accessorius*, and glosso-pharyngeal nerves, then it is probable that some fibers of the glosso-pharyngeal nerve are connected with the hypoglossal nucleus.

The symptoms on the right side point to an involvement of the glosso-pharyngeal nerve—viz., the loss of reflex in the palate and pharynx and the involvement of the pharyngeal muscles. On the left side there was no involvement of the glosso-pharyngeal nerve, according to the symptoms present, and we found the greater part of the respiratory column intact, except its lower and outer portion, which can readily be accounted for by the beginning degeneration of the vagus and *vago-accessorius* nuclei.

According to the facts in this case, I offer the following explanation: The slight degeneration of the vagus and *vago-accessorius* nuclei are not in comparison with that of the hypoglossal. Therefore, with really no involvement of the vagus at the commencement of the disease, as I have the right to suppose from the absence of symptoms characteristic of disease of this nerve, I consider the hypoglossal nucleus as the initial nucleus of origin for the supply of the tongue, palate, pharynx, and right recurrent laryngeal nerve. Also that the fibers of the glosso-pharyngeal nerve, which

were diseased in this case at the beginning, must undoubtedly take their origin, together with the *vago-accessorius*, in this region, and then ascend in the respiratory column to the glosso-pharyngeal region, and make their exit with that nerve. The very slight degeneration in the ninth nerve nucleus could not explain the symptoms which were present and characteristic of disease of this nerve. The left side helped to substantiate this theory, for here we had no pharyngeal symptoms present, but a beginning tongue and vocal-cord affection, together with, toward the end, a complete respiratory failure, and we find only a degeneration in the lower and outer part of the column, in the region of the hypoglossal nucleus. Can this, therefore, as I would suggest, be the course of the vagus fibers in the respiratory column? I do not want to establish this as a fact, for I think we are in need of more autopsies before this view can be confirmed.

The loss of reflex in the palate on the right side, which I also attribute as a loss of function on the part of the glosso-pharyngeal nerve, only took place toward the latter part of the disease. The very slight degeneration of the proper nucleus of the ninth, *vago-accessorius*, vagus, and twelfth nerves on the right side, together with the beginning degeneration of the twelfth and tenth nerve nuclei on the left side, were signaled by the first attack of respiratory failure. When this degeneration was about to complete itself on the other side, the patient had his second attack and died in a short space of time. Thus, after the first attack of respiratory failure, he had developed symptoms on the part of those nerves whose nuclei became affected in the latter part of the disease—viz., the ninth, tenth, and *vago-accessorius* on the right side, and the same nerves, together with the twelfth, on the left side.

As regards the glosso-pharyngeal nerve supplying sensory filaments to the front of the soft palate, palatine arches, or back of the tongue, I could not confirm this view, for with disease of this nerve in my own case there was no disturbance of sensation. Taste was likewise normal and not at all affected. It is generally believed that nausea is produced in a reflex manner through this nerve. I could produce the same in the beginning of the trouble, but later, when the reflex of gagging disappeared, this also vanished on the right side.

As regards the possibility of an accurate anatomical diagnosis, I think there should be no difficulty if we remember that paralysis of parts that functionate together, and have a distinct anatomical association, tends to an clear lesion.

As regards the nature of the lesion, I did not find a tubercle nor did I find any tubercle bacilli in specimens which were stained for that purpose. All that was present consisted of a simple atrophy of the ganglion cells and fibers, most of function. Whether this may be due to some toxic agent circulating in the blood, probably a pyogenic microbe, or to the tubercle bacilli, I will leave for others to decide.

A consideration of the preceding facts in this case and autopsy leads to the following conclusions:

1. That the origin of the hypoglossal nucleus gives

origin to nerve fibers which supply the tongue, palate, pharynx, and larynx on one side of the body.

2. That the column of nerve fibers known as the respiratory bundle consists of fibers from the glosso-pharyngeal, vagus, and vago-accessorius nerves, and that the lower and outer portion of this column probably serves as the locality for the vagus and vago-accessorius fibers.

3. That the glosso-pharyngeal nerve seems to control the reflexes of nausea and gagging in the soft palate and pharynx, and also to send some of the motor filaments to the pharyngeal muscles. These latter filaments take their origin in the hypoglossal nucleus and ascend in the respiratory column to the nucleus proper, and then make their exit with the glosso-pharyngeal nerve.

4. That the soft palate muscles are not innervated by fibers from the seventh nerve.

Bibliography.

1. Pen. *Klinische Wochenschrift*, No. 29, 1887.
2. Baret. De l'œmiatologie du larynx. *Archives de neurologie*, vii, No. 20, 1884.
3. Pen. *Deutsches Archiv für Klin. Med.*, xxxvii, p. 265, 1885.
4. Rosen. *Berliner klinische Wochenschrift*, 1886, xviii, 25.
5. Hitz. *Berlin. et klinische Wochenschrift*, 1885, 20.
6. Gaillet. *Compt. rend. de Paris*, li, 44, 46, 1872.
7. Jolly. *Archiv für Psychiatrie*, iii, 1872.
8. Lissac. *Revue mensuelle de méd. et de chir.*, 1877.
9. Lissac. *Deutsche med. Wochenschrift*, 1887, 32.
10. Oppenheim and Siemerling. *Charité-Annalen*, xii, 1887.
11. Ross. *Brain*, July, 1882.
12. Hirsch. *Deutsche ophthalmologie*, 1884, vii, 24.
13. Gussak. *Paralysis et cerebral Palsies*.
14. H. Sachs. *Mittheil. Ophthalmological Societies*.
15. M. Gussak. *British Medical Journal*, March 3, 1885.
16. L. Clarke. *Phil. Trans.*, 1868.
17. Hall. *Pharyngeal, Pathological, and Anatomical Researches*, Edin., 1869.
18. Scherer. *Mittheil. Berlin*.
19. Baret and Hirsch. *Proc. of the Roy. Society*, xlv, 1888.
20. Hirsch. *Journal of Anat. and Physiology*, 1889.
21. Hirsch. *Centralblatt für Klin. Med.*, 1889, 188.
22. Etter. *Corresp.-Blätter für schweizer Aerzte*, 1882, 24.
23. Hirsch. *Archiv für Physiologie*, Berlin, 1889, 70, 71, 72.
24. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
25. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
26. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
27. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
28. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
29. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
30. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
31. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
32. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
33. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
34. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
35. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
36. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
37. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
38. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
39. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
40. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
41. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
42. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
43. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
44. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
45. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
46. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
47. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
48. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
49. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
50. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
51. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
52. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
53. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
54. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
55. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
56. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
57. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
58. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
59. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
60. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
61. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
62. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
63. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
64. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
65. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
66. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
67. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
68. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
69. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
70. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
71. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
72. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
73. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
74. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
75. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
76. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
77. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
78. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
79. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
80. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
81. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
82. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
83. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
84. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
85. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
86. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
87. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
88. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
89. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
90. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
91. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
92. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
93. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
94. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
95. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
96. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
97. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
98. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
99. Hirsch. *Deutsche Wochenschrift*, 1889, 14.
100. Hirsch. *Deutsche Wochenschrift*, 1889, 14.

THE IMPORTANCE OF PLEASANT MEDICATION.

By MAURICE H. MURPHY, F.R.C.S., M.D.

I have the honor to acknowledge the receipt of the following letter from the Hon. Secretary of the Board of Health, New York City, dated January 10, 1890, in relation to the subject of pleasant medication.

* Read before the Medical Society of the County of New York.

gression, however, does not partake of a subject that is alien to our researches, but, on the other hand, to one that is essentially allied to our best results through means which may be defined as "the easiest way is the best."

During ten years of active practice, all the while observing the marked advancement being made in scientific medication and taking into consideration the general trend for many years past to make the practice of medicine an exact science, I have reached the conclusion, with which I doubt not you will agree, that the era for pleasant medication is attained, or at least approximately so.

The ablest authorities have displayed no skepticism as to the best methods of obtaining scientific results in the employment of drugs. They have drawn their conclusions as to the merits of a drug after its active principle has been isolated by the chemist, experimented with by the biologist, and tested in pathological conditions by the physician. This means for the elimination of the worthless drug and the adoption of that which is efficacious has advanced the science of medicine to its well-known high standing.

What the art of medicine was to the ancients, the science of medicine is to the modern world. The former was the acceptance of more or less vague idealities, while the latter is the application of known results. The present age receives with open arms all recognized scientific achievements. It welcomes progress, and sends to far and near the tried and accepted agents for the alleviation of the many ills to which mankind is the unwilling heir and frequent subject.

Solomon, while administering to his people from the storehouse of his proverbial wisdom, said that "a merry heart doeth good like a medicine." At that time he had access to the choicest balms of Gilead, and had offered to him nothing except what was good. While not reflecting upon the taste of a king, I do not believe that the best at that period would be accepted by the cultivated tastes of the present age.

No doubt many of us can recall to memory with a vividness bordering on actual taste the days when the anxious mother, concerned for the health of her child, before so bright and ruddy, but now grown pale and puny, would be compelled, under the direction of the family physician, to lay the child across her lap, and midst its kicking, crying, and screaming, and with perhaps the help of two assistants, administer that lingering nauseous dose of vermifuge made from oil of wormseed. Do you not taste it with a shudder even now, and remember it with a grief? In those days the ailing child would, if possible, quietly steal away from home and hide when it saw the physician coming. The child grows to manhood, and there still clings to him the idea that all medicine is disagreeable.

As a friend of mine once said: When he was young, his mother kept on hand the customary herbs, roots, and barks, and made them into a sick and bitter decoction for everything in the way of ailment. He didn't mind being sick, but it was the taste of taking that had tasting medicine. He would rather hold on to a bad cold than

have to hold any more medicine like that which he took for those days. All of you remember the old story of the boy who was importuned by his nurse to take his medicine, under the plea that "it was real nice and tasted so pleasant." He replied: "If it is so nice, why don't you take it yourself?"

In consequence of disagreeable medicine, people have frequently resorted to other means of alleviation and delays, to their detriment, in preference to seeking the aid of a physician. A medicine which is disagreeable, if given to a child at this age of enlightenment, except where there is imminent danger, would almost seem to amount to the "unusual" punishment that is forbidden by our time-honored Constitution.

Mothers have been heard saying to their children that "if you do thus and so I'll give you a teaspoonful of that medicine." Yet when the same child becomes ill that mother's heart wells to overflowing with sorrowful tears when compelled to add sufferings in the way of a medicine that makes the face writhe with disgust. Medicine is a corrective rod, and a good one, but it was never intended to correct morals. Medicine is Nature's remedy for physical ailments, and the physician is the director and instructor as to when and how and what kind to use. The mothers, while careful lest they antagonize the will and direction of their long-trusted and intimately associated family physician, also have some rights. And, pray, who dares deny a woman her say! She should, however, abide by her physician's direction as to when and how and what kind of medicine should be administered in a particular case, yet at the same time, surely, she has a right to protest against a medicine in a disagreeable form when the same kind may be obtained in a palatable form.

Many of our regular physicians, apparently entirely from habit, prescribe medicines regardless of taste, and the patient submits. Yet does he submit? In many cases the answer must be No. The patient is ever on the alert with all his senses acute for a medicine that will cure his ailments and at the same time be pleasant to his taste.

Other schools of medicine are indebted to many of us for their patients. The founders of these schools, and, however, while ostensibly differing with us as to the theory of practice, adopt most willingly our most appetizing and palatable medicines, and reap in a way the credit of his benefiting.

Our schools of medicine can not impress too strongly upon the minds of their pupils the attractiveness and necessity of prescribing medicines that are agreeable to the taste of the patient. A 50-cent tin of lozenges, the chief part of their practice should be. Prescribe only the medicines that are safe, quick and pleasant. First safe because we are the trustees of our patient's body and having no secret that these are in his hands and only bound to do nothing that will affect their health or imperil their lives. Second, quick because the health of our patients is at stake and we must get to the bottom of the trouble as soon as possible. Third, pleasant because the patient

within quick communication with the mind, and the mind is a potent factor in the alleviation of bodily ailments.

It is not less scientific to prescribe pleasant medicine, but, on the other hand, rather the application of our highest achievements. We are no longer tied to large doses of sulphur and molasses as an alternative, powdered cinchona as a febrifuge, scrapings of iron rust as a tonic, oil of wormseed as a vermifuge, and other similar drugs.

The general anatomy of the people has remained the same since the memory of man: their features and manners have changed, and but mark a higher degree of cultivation and advancement; their throats have not grown smaller, as has been said of the present whales as compared with the much-disputed one that swallowed Jonah; yet what would the people of to-day think if directed to take their pilular medicine in a piece of tissue paper to disguise the taste?

Not to us alone should be taken all the credit, however, for this era of scientific and pleasant form of medication. The untiring efforts of the analyst and manufacturing chemist have, by means of isolation and synthesis, placed in our hands medicines essentially active, efficacious, and palatable. Where formerly was administered a teaspoonful of nauseating medicine we now have as the best for the same purpose a minute tablet, compressed pill, pellet, parvule, or a minimum dose of a concentrated liquid.

The physician in the country is likewise benefited, for he finds himself able to carry the essentials of a drug store in his overcoat pocket without the slightest inconvenience. The necessity of his carrying medicines to patients is far more obvious than that of his brother practitioner in the city. In the country the patients are more or less far from a pharmacy, and the consequent inconvenience and delays in obtaining medicines would otherwise be attended with serious injury to the patient. That the most scientific and pleasant forms of medicine are the most convenient to the country practitioner is a fact that not only keeps him abreast with the times but also enables him to prescribe intelligently and satisfactorily to his patients and to himself.

In the large cities, more especially, there are many practitioners who are now using extensively the palatable medicines that are prepared in a concentrated form from the active principles. Some of these practitioners are among the most eminent in the profession, having professional degrees from leading universities and a general upward, and they make a point of keeping in their offices from fifty to one hundred thousand tablets.

In our own city there are many of our great medical practitioners, distinguished chemists and other makers of concentrated medicines. These same physicians will tell you that this system has not only been profitable but also gives greater satisfaction to their patients. The progressive advancement of the medical world is not to be contrasted with this form of medication. Some distinguished Institute of Medicine has shown that medicine is the best, however, should not influence them, as this represents only a part of the scientific advancement of medicine.

My school of medicine is the only one that has

career, is to keep on hand a well-filled case of tablet triturates. In so doing, as already intimated, he will find it not only more profitable, but that it will increase his office practice more than any other method known at the present time.

Again, I would have you consult with the patient relative to the form of the medicine that is to be taken. The sense of taste varies markedly. To some a bitter medicine is agreeable; some will only take sweets in a liquid or pilular form; some are unable to swallow a pill or a capsule from not having been taught in their childhood to do so; some can take anything and everything in whatever form it may be administered; and some veterans, not more progressive than their physicians, will take the vilest decoctions of bitter drugs, believing that the nastier the medicine the greater its power. In other words, I mean that the physician should not only diagnosticate the disease of his patient but as well his tastes, wishes, and peculiarities, whether mental or physical.

It is useless for me to attempt to show all the advantages of such a system to those who have adopted it in their practice, but I will simply mention an instance, that of a specialist, who informed me that it was about the only way he could hold his patients sufficiently long to cure them.

Those who seek the services of a physician nowadays and go to a young doctor, when they do sometimes, consider his habits, manners, general appearance, and most of all the character of his medicines—that is, his ability to prescribe scientifically and palatably.

I would not have you infer that it is best to treat solely the imaginations of the patients with placebos of saccharum lactis or with the vapors of aconite, belladonna, bryonia, or depend entirely upon Nature. It is our duty to make an accurate diagnosis in every instance, and this is possible in ninety-nine cases out of a hundred at the present day, and to treat them according to the latest scientific principles with agreeable medicines. In the few cases where it is necessary to prescribe a medicine that has a disagreeable taste, it is not a difficult matter at this stage of our science not only to mask it in a harmless vehicle but also to make it pleasant.

At present we have the means within our power to dispel all unfavorable impressions in the minds of the young and the old, and make the proverb of Solomon the motto of the sick and the well-to-day.

CONTRIBUTION TO THE STUDY OF THE ETIOLOGY OF VARICOCELE. BY E. TALMEY, M.D.

The twisted and tortuous condition of the spermatic vein usually denominated varicocele is quite a common occurrence. According to Richer¹ varicocele is found in sixty-fourth of the population in adult males. Janssen² says that varicocele occurs in about one male adult in every ten.

According to Curling, of 166,317 recruits examined within ten years in Great Britain, 23.5 per thousand; of 2,165,470 recruits examined in France within ten years, 10.05 per thousand were found suffering from varicocele. Landouzy* found varicocele in sixty per cent. of males between ten and thirty-five years of age. Kocher† met with varicocele frequently in adults between sixteen and forty years, while he seldom found it in children and aged people. According to Wickham,‡ varicocele occurs with the greatest frequency between the ages of fifteen and thirty-five years.

In spite of its frequency the physician does not meet with varicocele so often, because it seldom causes much annoyance. Those affected with the disease are scarcely aware of it, and it is only occasionally found when the patient is examined for another disease. When, however, the varicose veins increase both in number and in size until they become greatly distended and hold great quantities of venous blood, then there is a sensation of weight producing great discomfort at times and occasionally sharp pains. The dull, aching pain is felt in the testicle, cord and in the back. The victim usually experiences a depressing effect mentally, out of proportion to the gravity of the case, and is often rendered incapable of attending to the active duties of life.

There are many reasons assigned for this disturbance, but almost all the writers upon this subject seek the cause chiefly in the anatomical relation of the spermatic veins to the other viscera. The fact that varicocele is oftener found on the left side seems to justify the opinion attributing it to the anatomical structure of the spermatic cord.

The spermatic cord is composed of nerves, arteries, veins, lymphatics, and the vas deferens. These structures are connected together by areolar tissue and invested by the fascia brought down by the testicle in its descent. The investments of the spermatic cord are the musculus cremaster, from the musculus obliquus abdominis internus. Inside of the cremaster muscle there is the fascia Cooperi from the fascia transversa. The inner surface of the fascia Cooperi is covered by the tunica vaginalis, which consists of a visceral and a parietal portion.

The nerves of the spermatic cord are the nervus spermaticus, from the N. genito-cruralis, and the nervus pudendus, from the plexus pudendalis. Other nerves from the N. sympathicus form the plexus spermaticus. This plexus, derived from the renal and aortic plexuses, is joined by filaments from the hypogastric plexus which accompany the artery of the vas deferens.

The lymphatics of the spermatic cord form several large trunks which, accompanying the blood-vessels into the abdomen, terminate in the lumbar glands.

The arteries of the spermatic cord are the arteria spermatica, from the aorta abdominalis; the arteria vas deferens, from the arteria vesicalis superior, and the arteria cremasterica, from the arteria epigastrica profunda. The

* *Des varicoles de la veine spermique et de l'epididyme*, Paris, 1838.

† *Deutsche Chirurgie*, vol. I.

‡ *Le varicocele du testicule*, 1885.

¹ *Revue médicale*, 1866, p. 100.

² *Journal de Médecine*, 1866, p. 119.

spermatic arteries are two slender vessels of considerable length which arise from the front of the aorta below the renal arteries. Each artery passes obliquely outward and downward, behind the peritonæum, crossing the ureter and resting on the musculus psoas, the right artery being in front of the vena cava inferior, the left behind the flexura sigmoidea. On reaching the margin of the pelvis they pass each in front of the corresponding arteria iliaca externa and are directed outward to the internal abdominal ring. Accompanying the other contents of the spermatic cord along the spermatic canal to the testes, they become tortuous and divide into several branches, two or three of which accompany the vas deferens and supply the epididymis, while the others pierce the back part of the tunica albuginea testis and supply the substance of the testes. The artery of the vas deferens ramifies upon the coats of the duct, anastomosing with the arteria spermatica near the testes. The arteria cremasterica supplies the cremaster and other coverings.

The spermatic veins emerge from the back of the testes and, receiving branches from the epididymis, form the branched and convoluted plexus pampiniformis which constitutes the chief part of the cord. They ascend in front of the vas deferens, entering the abdomen through the inguinal canal. Then they unite to form two branches which ascend on the musculus psoas behind the peritonæum, lying one on each side of the arteria spermatica. Finally, they unite to form a single trunk which terminates on the right side in the vena cava inferior at an acute angle, on the left side in the left renal vein at a right angle. According to Gray* both veins are provided with valves. Jenckes† claims the absence of a valve in the left spermatic vein at its entrance into the corresponding renal vein. Henle‡ says the valves in the left side are imperfect. Clapp§ thinks that the valves in the right side are more numerous.

Thus formed, the spermatic cord extends from the internal abdominal ring, where the structures of which it is composed converge to the back part of the testicles. In the abdominal wall the cord passes obliquely along the inguinal canal, lying at first beneath the musculus obliquus abdominis internus and upon the ligamentum Poupartii, having the aponeurosis of the obliquus abdominis externus in front of it and the conjoint tendon behind it. It then escapes at the external ring and descends nearly vertically to the scrotum.

By this spermatic cord the testicle is suspended in the scrotum, which is invested by three tunics. The tunica vaginalis is the serous covering of the testes derived from the peritonæum. It consists of a visceral portion—the tunica vaginalis propria—which covers the outer surface of the testicle as well as the epididymis, and a parietal portion, the tunica vaginalis externa. The inner surface of the tunica vaginalis is covered by a single epithelial layer of flattened cells. The space is obliterated. The outer surface of the tunica vaginalis is covered by the tunica albuginea. It is the thin covering of the testicle. It is

rounds the glandular structure of the testicle, and at its posterior border is reflected into the interior of the gland, forming the so-called corpus Highmori. From this corpus numerous slender fibrous cords, septula testis, are given off, which radiate toward the surface of the organ and are attached to the inner surface of the tunica albuginea. The septula testis divide the interior of the organ into a number of cone-shaped spaces. The inner surface of the tunica albuginea and the different septula are covered by the tunica vasculosa. It is the vascular layer of the testis, consisting of a plexus of blood-vessels held together by a delicate areolar tissue. The corpus Highmori contains the rete testis, from which fifteen or more vasa efferentia go forth and form in windings the coni vasculosi, or the head of the epididymis. The vasa efferentia coalesce to form the vas epididymidis, or the body and tail of the epididymis. The continuation of the vas epididymis is called vas deferens, which, accompanying the spermatic duct into the abdominal cavity, opens into the vesicæ seminales.

Having been made acquainted with the anatomy of the testes and the spermatic cord, we shall easily understand why the spermatic veins are liable to be dilated. The dilatation of a vein may be caused either by a higher blood pressure; or by the diminished resistance of the vessel's wall. The blood pressure augments either by the increase of the resistances in the outflow of the blood, or by the decrease of the resistances in the blood supply. Now, the spermatic artery comes directly from the aorta abdominalis, where the highest blood pressure prevails. Hence, the pressure in the spermatic arteries is also high. The pressure in a vein is derived from the residual blood pressure of the corresponding artery. The spermatic veins are therefore supplied with an abundant amount of blood. This blood meets, in flowing off, with many resistances. From its entrance into the abdomen until its opening into the main veins the walls of the veins are subjected to the intra-abdominal pressure. Besides this, the left spermatic vein passes behind the flexura sigmoidea of the colon, which is often filled with fecal masses pressing on the vein. Furthermore, the spermatic cords hang vertically and the spermatic veins are very long. They are therefore under a high hydrostatic pressure. The left vein opens at a right angle into the renal vein, which also causes high pressure.

This long list of anatomical causes for varicocele is given by most authorities, but they all end by expressing dissatisfaction. Indeed, it would be, as Hensen* says, contrary to all the teachings of teleology that an anatomical arrangement such as this should produce and cause disease. Spencer,† therefore, rejects all the anatomical causes, acknowledging only the hereditary condition. The spermatic plexus in the adult represents the veins of the Wolffian body in the embryo. Now, says Spencer, it is the opinion that, instead of the complete involution during early life, some of the larger veins of the plexus remain still dilated and collapsed—first partially and so on, until the venous pulsation is completely obliterated due to the increasing resistance.

* Gray's Anatomy. 4th Edition. Med. & Surg. Dictionary, 1890.
 † Spencer's Diseases of the Male Genitals. 2d Edition. 1890.
 ‡ Henle's Anatomy. 1866.
 § Clapp's Diseases of the Male Genitals. 1890.

* Hensen's Diseases of the Male Genitals. 1890.
 † Spencer's Diseases of the Male Genitals. 1890.

larity and the increasing length of the spermatic vein, with its contained column of blood, may tend to dilate these collapsed but still patent veins. But the question remains just the same, How can a condition which exists in all be the cause of disease in some? I agree with Lydston* that sometimes varicocele may be due to a constitutional lack of tone, and with Carlier,† who saw three brothers unfit for military duty on account of varicocele, that inherent lack of muscular and vascular tonicity is sometimes the cause of varicocele. This inherent disposition may be the cause why Spencer‡ found varicocele also in childhood. But, when we consider that Landouzy found varicocele in sixty per cent. of male adults, we have to look for a particular pathological cause for this disease. I can by no means agree with Bennett[§] that the origin of varicocele is always congenital. I think that the anatomical relation, as well as constipation and inheritance, are only factors which will greatly help to exaggerate the pathological condition. The purpose of this paper will therefore be to show what, according to my opinion, is almost always the pathological cause for varicocele.

In October, 1893, a man, thirty-seven years of age, called upon me with the complaint of a decrease of sexual vigor. In the anamnesis he confessed to having practiced masturbation from his early boyhood until he got married. He is the father of a child four years of age. For two years he has been a widower. He made the impression on me that he was still an onanist. On examination I found a varicocele of the left spermatic vein. There was no other cause for the varicocele but the masturbation. I therefore decided to examine, from this time, every case of varicocele in regard to masturbation.

Soon after this I had the opportunity to see another patient, thirty-three years of age, with varicocele on both sides. The history of this case reads as follows:

As a boy twelve years of age the patient was taught by another boy the practice of onanism, which he continued practicing—sometimes daily or even twice a day; sometimes, feeling that the hand was tedious, only once a week or once a month—until this day. From his sixteenth year ejaculation began to take place during his masturbations, sometimes even *per se non stante*. When he was twenty years of age he began to associate with public women, gradually diminishing onanism. During the next twelve years he was suffering from a dragging sensation in the testicles, which were slightly enlarged. The scrotum seemed to be filled with a cottony swelling, causing the patient some pain. The swelling lasted twenty to thirty minutes, returning every three or four days. Noting that his support in the scrotum the pains subsided, he sought a temporary bandage which relieved for some time. For the next year the patient had found that the spells returned only after venereal excitement without gratification. He was, however, unable to produce them. He was then married. Two years later a prostatic infection occurred, causing a decrease in the patient's sexual vigor. He was then married and had two children and became an onanist again. The patient, however, did not find the condition of the scrotum improved by the use of a bandage. He was then referred to the surgeon, who recommended a radical operation by which the

tumor. The scrotum resembles a bunch of earthworms in a sac. In assuming a horizontal position the painful sense of dragging and weight along the cord and in the scrotum diminish, but not the pains in the lumbar and abdominal regions. The spells last on an average one to two hours. For a year the patient has noticed an immediate relief of the congestion by causing an ejaculation. The examination showed varicocele on both sides.

In this case also I could not find any other cause for the varicocele but the long practice of masturbation. The patient was never troubled with constipation, he suffered rather from diarrhoea.

The third case of varicocele, which I had the opportunity to see soon after, resembles in many respects the second. Mr. L., twenty-four years of age, has been suffering for two years from a dragging, painful sensation in his scrotum after the slightest effort. He began practicing masturbation when a boy of eleven years of age. The first coitus took place in his fifteenth year. He feels relieved of the painful sensation of dragging and weight along the cord after a sexual intercourse. On examination I found varicocele on both sides.

That in all the three cases masturbation was the only cause for varicocele was apparent for every one who saw them. I can not agree with Duplay,* who could not find any other cause for varicocele in a man twenty-two years of age but the opening of the left spermatic vein into the renal vein at a right angle. I think if he had interrogated his patient he would certainly have found masturbation as the cause. If Lydston† says that masturbation, sexual excess, and prolonged venereal excitement are undoubtedly responsible for varicocele in some instances, I think that masturbation is particularly responsible in almost every instance. Ranke‡ found that by irritation of the spermatic nerves the blood pressure in the veins becomes higher. Now I think there can scarcely be a greater unnatural irritation of the nerves than that caused by onanism. During such an irritation the testicles, being in a secretory condition, are supplied with a greater amount of blood, and anything that increases the amount of blood to the testicles is surely a cause for varicocele. Through the continual high pressure the walls of the veins become lax, flabby, and unresisting, and the vessels enormously dilated. The elastic and contractile tissue of the venous walls is absorbed and replaced by a low grade of connective or fibrous connective tissue.

The same condition as in the spermatic cord in the male is found in the broad ligaments in the female. By masturbation the amount of blood in all the sexual organs is increased and this causes varicocele in the broad ligaments, as the ovarian veins in the female are the analogue of the spermatic veins in the male. That varicocele is frequently found in women after pregnancies is agreed by most writers on this subject. Dudley[§] describes several cases of varicocele in women. Wiederhold|| declares the condition called "ovaria" to be varicocele in the female.

* *Ann. d. Hyg.*, 1889.

† *Ann. d. Hyg.*, 1889.

‡ *Kocher, Deutsche Chirurgie*, vol. I.

§ *Ann. d. Hyg.*, 1889.

|| *Zeitschr. f. Geburtsh. u. Gyn.*, 1891.

Clapp* is sure that the condition of varicocele is often present in the female. But I can not remember having read about a case of varicocele in a virgin such as I once saw in a girl whom I immediately suspected of practicing masturbation. The sexual organs were all in a normal condition and yet she complained of a dragging sensation along the ligamentum Poupertii and in the vagina. The broad ligaments were thickened and, though I could not inquire about masturbation, I could judge from her entire appearance that she did it. By assuming masturbation as the chief cause for varicocele, we can understand how Landouzy could have found it in sixty per cent. of adult males.

I have thought it worthy to write about this subject, because there are few diseases that *per se* are capable of causing so much annoyance to the patient as varicocele is.

258 EAST SEVENTY-EIGHTH STREET.

THE TREATMENT OF EPILEPSY BY TENOTOMY OF THE EYE MUSCLES AND BY OTHER SURGICAL MEANS.

BY CASEY A. WOOD, C. M., M. D.,

PROFESSOR OF OPHTHALMOLOGY
IN THE CHICAGO POST-GRADUATE MEDICAL SCHOOL;
OPHTHALMIC SURGEON TO COOK COUNTY HOSPITAL;
TO THE EMERGENCY HOSPITAL, AND TO THE ALLEMAN HOSPITAL, CHICAGO.

"If I wished to show a student the difficulties of getting at truth from medical experience, I would give him the history of epilepsy to read." (1)

(Continued from page 42.)

That the results—cure as well as relief—in a number of the cases operated upon by Dr. Ranney were the outcome of an operation seems plain, but whether *some other operation* would not have accomplished the same object is a question worthy of investigation in view of the fact that other surgical procedures, long since discarded (whose relation to the epileptic seizures was at least as obscure as that of ocular tenotomy in non-irritant heterophoria) have in the past wrought well authenticated cures. Indeed, ever since medicine ceased to be pure empiricism, a large number of surgical proceedings have been suggested for the cure of epilepsy. These were usually based upon some theory which concerned the causation of the disease; they were more or less faithfully tried; they had their advocates and opponents, and all that now remains of them is a mass of literature, a few extracts (3) from which may be both instructive and entertaining.

Almost every one of these surgical remedies, it must be noticed, could claim its list of cures, and a fairly plausible working hypothesis to explain how these cures were brought about.

One of the most ancient of these, which has its adherents even to this day is the ancient *arteriotomy*. Some one (4) thinks that it is efficacious, but those who oppose it think otherwise and explain it by the fact that even individuals have "counter-irritation." Many cases of cure by this means are however at hand. For example, Dr. J. H. Griffin (5) furnishes several of these. His intention

was a large seton (fifteen or twenty strands of silk or flax thread) into the back of the neck and allows it to remain for months, removing it only when there is too much local irritation. Of the five cases so treated (tonics being the only other treatment) four were cured or greatly benefited. The disturbance of the mental faculties which is a common attendant in such cases rapidly improves after the insertion of the seton. The cure in the following case was undoubtedly due to the open wound and not to the electrical phenomena sought to be induced. The patient was under the care of Dr. Usher Parsons (6).

Michael H., aged twenty-five years, a stout man, never had an attack of epilepsy until two years before treatment. From that time the fits became more frequent, until he had them daily. They began with an aura—a creeping sensation along the left arm from the fingers to the shoulder. He was sometimes able to prevent attacks by pressing on the nerves of the arm with his right hand. Tried a great many remedies, surgical and medical, but in vain. Parsons applied an apparatus to patient's neck, which was designed to draw off "an excessive quantity of electric matter from the brain" through a blister in the back of the neck. A silver plate was placed over the latter, over that a wet sponge, and these were connected by a wire with a second blister on the knee. The raw surface on the knee was covered by a zinc plate also attached to a wet sponge. Both the sores and plates were dressed daily.

Not a single attack of epilepsy occurred for more than two years after the use of this ingenious mechanism.

Blisters and the Cautery.—The use of the actual cautery to the nape of the neck and spine is recommended by W. A. Hammond and A. McLane Hamilton, but Brown-Séquard holds that cures may also be brought about by circular blistering, or cauterization with a red-hot iron, of a limb, or even a toe or finger—just as a ligature about a limb may abort an epileptic attack preceded by an aura beginning in the limb aforesaid.

A case in which the patient was cured by the application of the cautery to the larynx is reported by H. Green (7). Another by Recamier (8) is as follows:

A tailor, aged thirty-two years, was admitted to the Hôpital Dieu (Paris) on account of epilepsy. Had a circumscribed numbness in his left foot. Was variously treated without effect, but finally blisters were applied not only on the affected foot but to those parts affected by the wandering aura. He left the hospital, after having had several dozens of blisters applied, much better, and for three months as long as he was kept under observation, he was quite free from the attacks.

Burns.—Whether it is the shock to the system, the counter-irritation produced by the suppurating surface, or a combination of both, it is difficult to say, but it is well known that cases of epilepsy have been brought about by burns. An instance of this is recorded by R. Brown (9).

An epileptic told me the story and recovered a long term of his time. Before the second head point of the nose, forehead and back of the neck were burned. After a few days continued the attack had begun. See also (10), (11), (12), (13), (14), and many others here published in full.

Dr. Ranney had much partial (see XIV). S. T. Ranney's last case in the presence of vertigo (see XV). S. T. Ranney's last case in the presence of vertigo (see XVI).

in each eye. Muscular equilibrium was (apparently) normal, but after some days of wearing a 5° esophoria prism he "manifested" 7° of esophoria. This patient's seizures came at irregular intervals, varying from two weeks to three months. The usual tenotomy was done and the esophoria reduced to 0.5°. After freedom from attacks for five weeks he had a "fit, during which he overturned a lamp which set fire to his clothing and burned him so that his life was despaired of. He (ten months after first consulting Dr. Ranney) states that he *passed over six months without any epileptic seizure.*" He now manifests 1° of esophoria, but notwithstanding this has had only one fit in over nine months.

To which agency does this young man owe his relief from epileptic attacks—the tenotomy of his external rectus or the nervous shock of the extensive burn?

Esection of Superficial Scars.—Cures brought about in this way are numerous enough. If the cases recorded in nineteenth-century literature were divided into two classes, the first class would include those in which to an unprejudiced mind there certainly was some definite connection between the cicatrix and the attack. Either the epileptic aura began by peculiar sensations in the scar itself, or it was a source of annoyance to the patient, justifying the idea that it contained imprisoned nerve fibers which were acting as a genuine peripheral irritant. In the second category might be placed those scars the existence of which the patient and his friends had forgotten until they had their attention directed to them by the surgeon. Notwithstanding the cures that have resulted from the removal of such scars, one has a right, in view of the mysterious way in which other surgical methods (to be described later on) have produced cures, to be skeptical about the causal relation assumed to exist between the scar and the epilepsy. One example (16) will suffice:

A boy, aged eight years, suffered from severe, frequent, and typical epileptic seizures. He had an aura which began by twitching of the muscles of the right side of the face. It then spread to the throat, and finally involved the whole body. On the right parietal bone there was a large, tender scar (the result of a fall), and it had been noticed by the parents that shortly after the wound healed the epileptic attacks began. The cicatrix was excised, the fits disappeared, and two years afterward he was mentally and physically healthy.

Burns and Amputations.—Unless it be the result of a shock to the cerebral centers or the outcome of a lasting mental impression, it is difficult to see how amputation of limbs that have no discoverable connection with the disease could cure epilepsy, and yet there are a number of recorded cases. Among the earliest of these are two by Astruc (17).

B. aged four years, was convulsed fatally when he had suffered from epilepsy, and, while in the hospital, he had gained sufficient strength to become amputee. The operation was performed on the 10th of March, and the patient died on the 11th. The cause of death was ascribed to the operation. After several years of suffering he fell ill on the 10th of May, and died on the 11th. The cause of death was ascribed to the operation. After several years of suffering he fell ill on the 10th of May, and died on the 11th. The cause of death was ascribed to the operation.

of the operation he had but one slight fit. Had been free of them for a year, and at the date of the report had improved in all respects.

Mlle. Fleury, of healthy parents and aged fifty years, became at the time of her first menstruation, and without apparent cause, the subject of fits. At first they came on every five or six days, but at last they became so frequent that she had them very often and daily. The seizures were typically epileptic, and set in without aura. She remained in this wretched state until her fifteenth year, when she fell into the fire and badly burned her right hand. This accident had little or no effect upon the epileptic attacks. The wound never completely cicatrized, and there continued to be a watery discharge from it. She injured the hand again, the scar burst open, cellulitis set in, and the limb became so affected that an amputation was done. Previous to the operation her mental condition was pitiable; she was barely able to look after herself and could hardly speak. The operation seemed to change all this. The wound healed nicely, the fits did not return, and her general health as well as her intellectual powers gradually returned.

Amputations.—Many such cases are on record. Cures have followed amputation of the lower third of right forearm and hand (17), leg (18), left index finger (19), etc.

Phlebotomy.—Of course this remedy (?) was well tried in the days of our grandfathers. It was always easy to discover a "congestion of the head" in the "falling sickness." Yet, whether it was the bloodletting, the mental impression, counter-irritation, or what not, apparent cures of epilepsy did follow repeated venesections in the old days, when it was fashionable to bleed a man for almost every disease. Any one who is interested may find details of three cases so cured in an article by the French surgeon Colson (20).

Ligature of the Carotids.—This measure was at one time recognized as a legitimate and potent means of curing epilepsy.

It was undertaken with a view of lessening the blood-flow to the "irritable" nervous centers. Unjustifiable as we now believe it to be, it yet furnishes us with a fair array of cures, many of them performed in this country—e. g., by Valentine Mott (21) and other well-known surgeons.

Under the care of the British surgeon Preston (22), a pensioner, aged twenty-five years, of a robust constitution, had suffered for five years from severe epileptic attacks, which recurred about every two weeks, often without any assignable cause. Preston thought that a cerebral congestion might lie at the bottom of the trouble, and on the 4th of February, 1831, one of the patient's common carotids was tied, after great loss of blood. The ligature fell off on the 5th of March, and two years after he had not had a single attack of epilepsy.

Two cases are reported by Dr. C. Angell (23), of Pittsburg, Ind. The first patient had fits for three or four years. These increased rapidly in severity and frequency until on the day before the operation he had fifteen or twenty fits in the forenoon alone. The right common carotid was ligated. The operation was successful and the patient never had another attack. Unfortunately, however, he died on the seventh day. Dr. Angell was more fortunate in his next attempt.

A man, aged forty years, had seizures for seven years. He had been under treatment by a great number of physicians, regimen and purgation, without benefit. The attacks later on

When one remembers the reflex relations of the reproductive system, it is not to be wondered at that interference with the organs of that system has been common enough in the attempt to find a satisfactory surgical cure for epilepsy. When the attacks are plainly connected with diseased ovaries, testes, etc., the duty of the surgeon is plain enough; but, as in the cases about to be referred to, it is difficult to imagine how the removal of a normal organ can bring about a cure of the disease. Yet that such has been the case there is abundant evidence.

Circumcision.—Congenital phimosis has been noticed in eleven out of twenty-five consecutive cases (38) admitted into the London Infirmary for epilepsy and paralysis. Collections of sebum underneath the prepuce may lead to balanitis and herpes. The irritation thus set up causes in adolescents sexual excitement, masturbation, and reflex neuroses. W. Althaus thinks that if this does not actually cause epilepsy it may predispose to it, and if circumcision does not cure the disease it often relieves it and is a rational adjunct to other treatment. That some cures have followed circumcision I think has been proved. A good article on this subject is Sayre's (L. A.) *Circumcision versus Epilepsy* (39). Gowers (40) thinks it should be adopted in all cases where there is reason to associate the disease with masturbation.

Castration has been performed for substantially the same reasons that circumcision is urged, and although condemned by most text-books (41), it has its advocates and its list of cures. Rooker (42), Ogle (43), Bacon (44), are among the more modern defenders of the practice.

Batley's Operation.—The operation of "normal" ovariectomy has been performed extensively here and in England, but it is not generally known that one of its earliest advocates (45) argued that, if justifiable at all, its use should be restricted to the treatment of epilepsy. Batley reported among his earliest cases one in which the operation was performed for the cure of that disease. Among Lawson Tait's (46) cases of "spaying" were three done for "menstrual epilepsy." How the excision of normal or nearly normal ovaries can cure idiopathic epilepsy it is difficult to see, unless the mental impression made upon the patient is the cause of the cure.

Removal of the Clitoris.—It was for the advocacy and practice of this operation for the relief of functional nervous disease that Mr. Baker Brown (47) got himself into trouble twenty years ago. His idea was that many cases of epilepsy (for example) in females were the result of irritation (sometimes connected with, sometimes unconnected with, self-abuse) residing in the superficial pudendal nerves. The removal of the clitoris, he supposed to be the correct thing, and he began to excise the supposed offenders. He never dreamed that he produced the effects, there is no doubt, to prove that cases of insanity from epilepsy did occur after clitoridectomy. Remarkable (48) thinks that an operation so essentially equal to that of the removal of the clitoris (the clitoris being) might prove equally successful in some cases of epilepsy if performed on the head of the neck, the source, in his view. He is of the opinion that it is mainly through the strong impression made upon the mind, set a

violent change in the body, that the operation mentioned, as well as tracheotomy, etc., produces its effects.

Nerve Stretching.—That some ill-defined alterations in the nervous elements, both peripheral and central, might be productive of remedial results, is the reason given for nerve stretching in epilepsy. There are few instances recorded where the offending (or suspected) nerve has been stretched with good results in idiopathic epilepsy. Professor von Nussbaum (49) publishes a case of cure.

A man suffering for many years from frequent attacks of epilepsy presented himself for treatment. He had double *pes equino-varus*. Both tibial and peroneal nerves were laid bare at the popliteal space for seven centimetres of their course and stretched with the forefinger. The fits ceased and for six months after the operation, while he was kept under observation, he has not had a single attack of epilepsy.

Spontaneous Cures.—It is natural and proper, when an operator succeeds in curing a case of epilepsy and the procedure is a new one, that he should put forward some hypothesis to account for the *modus operandi* of the surgical treatment which resulted so favorably. But the absence of relationship in our present state of knowledge between remedy and cure is in many cases so evident that the author wisely, it seems to me, either attempts no explanation at all or adds his history to the accumulated list of "spontaneous" cures. No room can be given here for discussing even the most interesting of these. References to many of them will be found in the *Index Catalogue of the Surgeon General's Library* under a special heading. A good example is, however, given by West (50) which I am tempted to copy in full. The author does not assume that the abscess mentioned had any connection with the interior of the skull.

A boy, aged ten years, suffered from occasional attacks of *petit mal* in February. In the following August the attacks became regular epileptic seizures, which increased in severity and frequency, and in the succeeding March returned several times a day and were accompanied by marked impairment of his mental powers and by an unsteady and tottering gait. After two months' trial of various remedies and the insertion of a seton in the back of his neck, he left the hospital worse than on his admission. On June 13th he fell in a fit and struck his occiput a violent blow. A large abscess formed here which burst of its own accord, continued to discharge for a few days, and then healed up. It is just two years since this happened, and from that time to the present there has been no return of fits; the boy has recovered his power of walking and has all the cheerfulness and intelligence that befit his years.

From the foregoing facts I conclude as follows:

1. Heterophoria in some form, latent or manifest, can be shown to exist as an ocular condition in fully ninety-five per cent. of all individuals.

2. Alone and when associated with ametropia it is not an uncommon cause of so-called asthenopia.

3. In the latter case the correction of the accompanying refractive error in the large majority of cases relieves all the symptoms set up, both by the ametropia and muscular anomaly; when it does not, the heterophoria may be said to be responsible for the asthenopia.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M.D.

NEW YORK, SATURDAY, JULY 14, 1894.

THE LIMITATIONS OF SYMPHYSIOTOMY.

IN the *Journal des praticiens* for June 27th there is a letter from Brussels, dated June 25th, in which the writer gives a summary of certain arguments raised by M. Fraipont at a recent meeting of the *Société médico-chirurgicale*, of Liège, against the indiscriminate use of the operation of pubic symphysiotomy. M. Fraipont dissents from Caruso's dictum that if death follows this operation it is the surgeon's fault and not that of the operation. He appeals to the most recent statistics in proof of his contention. It appears from a communication made to the society in question that, out of thirty-three symphysiotomies performed in France in 1892, six were followed by death; in other words, the mortality was 18·1 per cent. Frommel has collected a series of seventy-eight symphysiotomies done in Germany in 1893, and the death-rate among the mothers was 11·5 per cent. and among the children 28·2 per cent. Whatever may be the future of this operation, says M. Fraipont, we must, in view of these facts, admit that it involves some dangers, among which are those of hæmorrhage, septicæmia, and surgical shock. On comparing the statistics of symphysiotomy with those of the Cæsarean operation, he finds in a series of thirty-five cases of the latter a maternal mortality of 2·8 per cent., together with an infant mortality lower than that of symphysiotomy. Moreover, the operation of symphysiotomy is sometimes beset with difficulties, such as deviation and ossification of the symphysis, and by such accidents following the operation as hæmorrhage behind the pubes or proceeding from the clitoris and laceration of the bladder or of the vagina, with an ultimate formation of fistulæ affecting the urethra or the bladder and the vagina.

M. Fraipont went on to ask concerning the ultimate condition of those who have been subjected to this operation, and cited Mullenheim as having observed three women on whom it had been performed by Freund, of Strasbourg, in whom union had failed to take place and the pubic bones were separated and movable. In one of these women there was a laceration of the perineum and rectum. As two of them had prolapse of the vagina, incontinence of urine, and inability to perform their ordinary work. In consequence of all this, M. Fraipont thinks that the indications for symphysiotomy must be limited. In the present state of our knowledge, he believes that the operation should be limited to cases in which the operation and the Cæsarean section are equally dangerous, and in which the Cæsarean section is the only alternative to death. In such cases, if the symphysiotomy would be the operation of choice.

The important remark that M. Fraipont makes is far from being that of all Belgian obstetricians, and refers to M.

Lambinon, who founds a favorable opinion of symphysiotomy on Varnier's statistics of a hundred and twenty-four operations with a maternal mortality of only twelve, but, nevertheless, expresses himself with reserve and opposes the abandonment of artificial premature labor, which has been proposed in all cases where symphysiotomy would enable the head of a full-grown fœtus to pass. Finally, says the correspondent, the truth seems to be that the field for the Cæsarean operation begins where that for symphysiotomy ends; but doubtless the Sigaultean operation will give better results when the clinical and operative details pertaining to it have been more thoroughly studied. This moderate view finds the greatest number of supporters among the Belgian physicians.

THE TREATMENT OF INFANTILE CONVULSIONS.

IN a recent number of the *Gazette des hôpitaux* M. Jules Simon presents a very carefully written paper on the treatment of convulsions in infants. He agrees with most observers that the causes of this disorder in the great majority of cases is some digestive disturbance. He first directs his attention, therefore, to the alimentary canal. This is to be cleared of its contents as rapidly as possible. A warm enema of oil or glycerin is given at once. In our own experience glycerin has proved the most efficient means of evacuating the bowels quickly. One or two teaspoonfuls should be injected, without the addition of water, and should be retained by compression as long as possible. If there is the least reason to suppose that the stomach contains undigested food, it should be evacuated by an emetic. To check the convulsions before the enema has acted, the author advises the use of chloroform. We have known a fatal termination to be attributed by the friends to the use of this remedy. It must be given with extreme caution and should be dispensed with until other measures have failed. In convulsions due to irritating substances in the stomach and bowels nitrite of amyl may be resorted to, but is not so efficacious as in epileptic convulsions. After the bowels have been made to act, or when they have failed to act after one or two attempts have been made to affect them, the most efficacious treatment, M. Simon believes, consists in the rectal administration of chloral and musk. The use of chloral in this condition has come into very general use in this country. It acts efficiently and promptly, and is well tolerated by children. The author's dose, however, it seems to us, is rather large, although it may be given in proportionately large doses to children. He advises eight grains for a child six months old and fifteen grains for one a year old. In addition to this, he administers small doses of bromide of potassium every hour. This drug unquestionably has a beneficial effect, not so much in the immediate relief of the convulsions as in preventing their recurrence. We prefer bromide of sodium for children. The most reliable means of preventing recurrence in ordinary cases is complete evacuation of the alimentary canal. If undigested or irritating matter is allowed to remain, convulsions are very prone to recur.

Cutaneous remedies, such as hot baths, mustard baths, and

blisters to the back of the neck, are advised by the author only in very obstinate cases. Search should be made at once by the physician for the cause of the convulsions. If indigestion, constipation, and inflammatory disease of the bowels are absent, cutaneous irritation or reflex irritation from hernia, phimosis, or foreign bodies in the ear or nose should be sought for, the possibility of uræmia or disease of the brain being always kept in mind.

MINOR PARAGRAPHS.

HOSPITAL REPORTS.

It is very much to the discredit of most American hospitals that their annual reports are little more than lists of officers and benefactors, barren statistical tables, acknowledgments of donations, and directions for the guidance of wealthy persons as to testamentary benefaction. It has been gratifying to note within the last few years, however, instances in which several of the more considerable hospitals have shown a tendency to rise above such matters and print more or less of the recorded work actually done. Notable among recent examples are the *Sixth Annual Report of the Methodist Episcopal Hospital*, of Brooklyn, and the first number, dated January, 1894, of the *Manhattan Eye and Ear Hospital Reports*. The first-mentioned of these is an octavo brochure of nearly two hundred pages, and, besides the matter usually to be found in such publications, it contains reports of the two surgical divisions, with a list of the operations performed, a report of the pediatric service, a report of the medical division, a report of the pathological department, and a report of the ambulance work. The first issue of the *Manhattan Eye and Ear Hospital Reports* contains about a hundred and fifty pages, giving clinical histories of cases of disease of the eye and of the ear, also of diseases commonly coming under the care of the laryngologist or the rhinologist, an enumeration of the cases of the several affections treated in the neurological department, and a report of the work done in the pathological department (preceded by brief notes on treatment of disease of the nose, and on a method of determining the relative number of the bacilli in sputum preparations). Several of the articles are handsomely illustrated by reproductions from photographs. We shall have soon before us further reports of the sort from these two institutions, and we hope that the time is not distant when they and the hospitals that give them their opportunity of the publication of making the most part of their work a matter of public record will be joined by those who have hitherto neglected this most important function of a hospital organization.

THE COUGH MIXTURE.

In a paper read by Mr. Joseph W. Fennell at the second meeting of the Pharmacological Therapeutics Association and published in the *Journal of the Pharmacological Association*, London, entitled *The Cough Mixture*, the author states that since the mixture had been used very largely in the Philadelphia Hospital, he had found a small number of cases in which it was given of no benefit whatever. Two causes of clinical failure are mentioned, and pointed out as likely to be overlooked and sources of error in the consideration of a cough mixture.

ITEMS.

The Appleton Prize.—A number of twenty-five dollars worth of books given annually to the author of the best of D. Appleton & Co. in the literature of the last year.

tion before the board of medical examiners of the State of North Carolina, was won this year by Dr. Hubert A. Royster, of Raleigh, whose percentage was 98.93, which was the highest in the history of the board.

A Political Honor to a Physician.—An esteemed correspondent writes from San José, Costa Rica, to inform us that Dr. Juan J. Ulloa, who was a delegate from Costa Rica to the Pan-American Medical Congress, and who is a graduate of the Medical Department of the University of the City of New York, has been appointed Secretary of State in the Departments of the Interior and of Public Improvements of Costa Rica.

Changes of Address.—Dr. R. M. Howck, from Chicago to Moscow, Idaho; Dr. Louise G. Rabinovitch, to No. 849 Lexington Avenue; Dr. Allen M. Thomas, to No. 61 West Fifty-fourth Street.

The New York Polyclinic.—Dr. J. Riddle Goffe has been appointed professor of gynecology.

The Death of Dr. Solomon Van Etten, of Port Jervis, N. Y., occurred on Saturday, the 7th inst., as the result of apoplexy. The deceased was widely known and highly respected in the State of New York. He was sixty-five years old and a graduate of the Albany Medical College, of the class of 1855.

The Death of Dr. Conrad Lange, formerly of New York, is reported to have taken place in Berlin on Thursday, June 28th. The deceased, who was a native of Germany, was forty-two years old.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 1 to July 7, 1894.*

McCHERRY, GEORGE, Captain and Assistant Surgeon, will be relieved from duty at Fort D. A. Russell, Wyoming, by the commanding officer of that post, and will report for duty at Fort Washakie, Wyoming.

MERIWETHER, FRANK T., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Logan, Colorado, by the commanding officer of that post, and will report for duty at San Diego Barracks, California.

DE LOFFRE, AUGUSTUS A., Major and Surgeon, Fort Logan, Colorado, is granted three months' leave of absence, with permission to go beyond sea.

Society Meetings for the Coming Week:

THURSDAY, July 13th.—Meeting of the *Congress of Congress* (annual—Cooperstown), N. Y.

Letters to the Editor.

ANOTHER CASE OF GONORRHEA WITHOUT TESTES.

WILMINGTON, DELAWARE.

To the Editors of the *New York Medical Journal*.

SIR: Having read the letter published in the *Journal* of April 26th and dated 22nd, respectively, in the *Standard* of the 26th, on gonorrhea without testes, in a case of children, I am tempted to point out the following facts, which perhaps may be of some interest to your readers.

My patient, a boy, suffered from gonorrhea from infancy, contracted in a house of ill fame. I had treated the father for gonorrhea from his infancy, and he had not been cured, though he had the same discharge from his penis. I found in my

well-developed case of gonorrhoea, characterized by a purulent discharge, hyperemia and swelling of the external genital, and frequent desire to urinate. The disease was very stubborn, but finally yielded to antiseptic irrigation of the parts, ending in apparent complete recovery. I had warned the father of the danger of communicating the disease to his wife, and he had abstained from coitus until all symptoms of the trouble had disappeared. Calling his attention to the importance of keeping the infection out of his eyes, and cautioning him to be very careful with his towels, it never occurred to me to warn him especially in regard to the possibility of infecting his children. Upon a scrutinizing examination of father and child I obtained the following history: About three days previous to the first symptoms in the little girl she had been given a bath in a bath tub used the same day by the father. I could not ascertain whether the same towel or sponge had been used by both patients, but suppose such was the case.

Though no microscopic examination for gonococci was made, I am certain the disease in the girl was true gonorrhoea, as her mother had kept her very clean, giving her a bath twice a week, and the disease was very reluctant to yield to the most assiduous treatment. I report this case, not very interesting in itself, for the purpose of calling attention to the frequency with which that dreadful disease, gonorrhoea, can be communicated to the innocent, especially little girls. The long prepucio protects the urethra of little boys, and makes infection more difficult, while the mucous membrane of the vagina and urethra in girls is without such protection.

Knowing the fearful results of gonorrhoeal infection in women, first pointed out by Noeggerath, and now generally understood by the profession, it becomes the sacred duty of every physician to guard against it wherever it can be done. Above all, the innocent must be protected and saved from a life of suffering and misery. Not to warn a patient with gonorrhoea of the possibility and danger of communicating his disease by means of contact with infected clothing, bedding, towels, sponges, etc., to innocent members of his family, amounts, in the light of modern science and experience, to nothing less than criminal negligence.

CARE B. FIELD, M. D.

A CASE OF MULTIPLE PREGNANCY, WITH TWENTY-FOUR HOURS BETWEEN THE BIRTH OF FIRST AND SECOND CHILD.

BELLEVILLE, ILL., June 19, 1894.

To the Editor of the New York Medical Journal:

SIR: In No. 50, June 9th, of the *Journal*, I find a report by Dr. J. L. Calverton of a case of multiple pregnancy with forty-two hours between the birth of the first and that of the second child. I was, of course, a reader, not for the purpose of throwing any new light on the subject, but because I think it is a case of much interest for obstetrical purposes.

On June 15, 1894, Mr. C. called at my office and announced some distress. His wife had given birth to a child the day previous. The attendance in the case had told them that there would be a second child, that he would probably meet my assistance, and I should have to call in to see him. I understood the statement that he had been pregnant. I would not be able to see him. I gave him a bath. I had attended him on former occasions. He was tall, well-built person. I found him in good condition, having a good pulse and no abnormal symptoms of any kind. The attendance told me that he had been pregnant for the day previous. I had no conversation

revealed the umbilical cord in the vagina, the os dilatable, a transverse position of the fetus, no arm presenting. I made my hand and arm thoroughly aseptic and delivered by version without any difficulty. The delivery of the placenta was normal. The patient made a good recovery, together with her two babies. I had never before come across a similar case. I have never waited longer than six hours between the delivery of the first and that of the second baby. I think when the physiological conditions cease, artificial means should be instituted.

J. KOHL, M. D.

A RAWHIDE PROBE FOR THE EUSTACHIAN TUBE.

46 EAST TWENTY-FIFTH STREET, NEW YORK, July 6, 1894.

To the Editor of the New York Medical Journal:

SIR: The *Journal* of June 16th prints a letter which contains a just criticism of the celluloid probe for the Eustachian tube.

Last winter the writer showed a Eustachian probe made from rawhide by Tiemann & Co., of New York, at a meeting of the New York Otological Society. These probes are flexible, and possess sufficient elasticity to allow of easy introduction. They never break, and, on account of the organic material used in their construction, they can be employed as a vehicle for different solutions suitable for the Eustachian tube, which they absorb to a limited degree when immersed for a short time. They also offer a good means for the introduction of ointments, which adhere to them better than to a celluloid or whalebone probe.

J. W. GLEITSMANN, M. D.

HYSTERICAL APOPLEXY.

WESTON, MO., June 26, 1894.

To the Editor of the New York Medical Journal:

SIR: In your issue of June 23d is a summary of an article on Hysterical Apoplexy, by M. Comby, from the *Mercure médical* for May 30th. I wish to report a similar case. In April, 1893, I was called to see my mother, sixty years of age, who had been hysterical all her life. I found her with complete left hemiplegia, both motor and sensory. She recovered from this in about two weeks, and enjoyed very fair health until January of this year, when the second attack came on. This time the apoplexy produced complete paralysis, unconsciousness, and death on the third day after the attack.

WILLIAM WARINER, M. D.

*The rapid recovery from the first attack hardly seems sufficient to characterize it as hysterical.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 24, 25, and 26, and June 1, 1894.

The President, Dr. J. EWING MEARS, of Philadelphia, in the Chair.

(Continued from page 7.)

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle) and of the Arm at the Shoulder Joint, with Special Reference to Methods of Controlling Hæmorrhage; with the Report of One Case of the Former Amputation and Four of the Latter. Under this title Dr.

*Dr. Comby has been criticised for attributing apoplexy to hysterical conditions, and for not having given a more complete history of the case.

W. W. KEEN, of Philadelphia, presented a paper in which were considered first those amputations which allowed of simple disarticulations at the shoulder joint itself; those in which the axilla was invaded, yet only to such an extent as to allow of its being thoroughly cleaned out, followed by amputation at the shoulder; and those in which removal of the entire upper extremity, including the scapula and clavicle, was required. In simple amputation at the shoulder joint the control of hemorrhage was the key to the situation. The methods for the prevention of hemorrhage were: First, those applicable to the subclavian vessels; secondly, those applicable to the axillary. Most text-books recommended compression of the subclavian by the thumb or a well-padded key. Dr. Allis had modified this method by substituting a stick eighteen inches in length with a pad of sterilized gauze at its extremity. This obviated the danger of slipping and could be applied without fatigue on the part of the operator. The author had suggested compression by means of a solid pad held in position by an Es-march bandage, but on trial in the case of a child this had proved unsatisfactory. A third plan consisted in ligation of the subclavian artery. This was objectionable on account of the prolongation of the operation, also on account of the necessity of resecting the clavicle in order to ligate the vein, for if the vein was not ligated there was danger of the entrance of air.

Axillary Methods.—1. Those in use prior to the introduction of Esmarch's tubing. 2. Different methods of using Esmarch's tubing. Under the first head there were: *a*. Compression of the inferior fold by the fingers, which seized the vessels before they were cut. *b*. Harvey's method by compression of the vessels by means of a padded ruler thrust into the axilla. *c*. Ligation or seizure of the vessels with hemostatic forceps before they were cut. *d*. Gross's compressor; but practically this was never used. *e*. Furneaux Jordan's method by making a surgical amputation at the surgical neck, securing the vessels as in a hip-joint amputation, the blood-vessels having been compressed by an Esmarch band or other means followed by disarticulation of the upper end of the humerus.

Under the second head: *a*. After making the antero-external flap, a stout pin was passed through the postero-internal flap between the vessels and the bone, and elastic tubing wound over the ends of the pin. In this method there was danger of the vessels retracting above the constricting band. *b*. Esmarch's method, in which an elastic tube was placed in the axilla and drawn tight over the shoulder, where it was secured by the hand of an assistant. This was open to the danger of slipping of the bandage after disarticulation of the bone.

Morrison's method, in which the tubing was applied as in the Esmarch method, but was held in place by a bandage passing around the chest and under the tubing at front and behind.

Wyeth's method, by means of elastic tubing. In this method the operation is performed in two ways. The first was to cut the right axilla to the root. The other posterior axillary flap, the elastic tube being long and a quarter of an inch in diameter, was used. The anterior pin was introduced through the middle of the anterior axillary fold at a point a little nearer the body than what might be called the center of the fold transverse. The point of emergence was of much greater importance than in a simple amputation. This could be secured within the fold of the axilla. The second pin was introduced at a corresponding point through the posterior axilla, and extending to the axilla within the fold of the axilla. The point of emergence was of importance, for if the pin emerged outside the fold of the axilla, the treatment by means of the elastic tube would be of no avail. The tubing was cut nearly above and below the flaps, so that each other, thus being the vessels and preventing the vessels to retract. The pins being in position a piece of

rubber tubing was wound round the axilla and shoulder on the higher side of the pins. The disarticulation having been effected, the main vessels and all visible vessels were tied and the tubing was removed, the vessels spurting being grasped with hemostatic forceps. The author considered this the most satisfactory method of controlling hemorrhage, and he felt confident that any one who adopted it would abandon all other methods in its favor, except possibly in emergency cases.

As to amputation at the shoulder joint in cases in which the axilla was invaded so high that Wyeth's pins could not be used, in 1812 Delpech had proposed to make an oblique incision extending from the external third of the clavicle to an inch above the inferior border of the great pectoral muscle. We thus discovered the lesser pectoral and could cut near to its origin on the coracoid process of the scapula. The index finger was then carried through the cellular tissue along the serratus magnus, then the subscapular, and was used as a hook in order to draw the mass of vessels and nerves outward. The artery was found in the anterior portion of this mass. The artery and vein were then ligated. The advantages of this method were that it gave wide access to the axilla, and that we could determine with ease how far and how great was the invasion of the axilla, so that, if thought advisable, the operation could be abandoned at this point, or, if it was decided to proceed with the operation, the incision already made served as the inner part of the deltoid incision. The author had employed this method with great satisfaction in a case where a sarcoma of great size had invaded the axilla nearly to the clavicle.

As for cases in which it was necessary to remove the arm, the scapula, and the clavicle, the methods which had been employed to control hemorrhage had been: 1. Simple compression of the subclavian artery. 2. Compression of the artery after resection of the clavicle. 3. Ligation of the subclavian prior to beginning the amputation. 4. Resection of the middle half of the clavicle and ligation of the subclavian. 5. Wyeth's procedure of first tying the artery, then forming the flaps, and, when the arm, clavicle, and scapula were only connected with the trunk by the veins and nerves, securing the veins and cutting the nerves. 6. Ligation of the artery and vein after resection of the middle portion of the clavicle. This seems to be by far the preferable method. The advantages of this method were that it prevented hemorrhage from division of the axillary and its branches, it diminished the amount of blood lost during the operation, it prevented the entrance of air into the veins, it permitted of a large opening of space between the upper extremity and the chest, and it enabled us to divide the posterior attachments of the upper extremity, where the arterial circulation was still going on, at the end of the operation.

As to the question of the time required for the operation, it had been three weeks. The mortality in the more recent operations had been extremely low—one in fourteen. Again, by this method we could do the operation in a very short time. The relative smallness of the flaps required. In view of these things, the author proposed to use the method in all cases of amputation at the shoulder joint, and in all cases of amputation at the shoulder joint in which the axilla was invaded so high that Wyeth's pins could not be used. The author proposed to use the method in all cases of amputation at the shoulder joint, and in all cases of amputation at the shoulder joint in which the axilla was invaded so high that Wyeth's pins could not be used.

The author proposed to use the method in all cases of amputation at the shoulder joint, and in all cases of amputation at the shoulder joint in which the axilla was invaded so high that Wyeth's pins could not be used. The author proposed to use the method in all cases of amputation at the shoulder joint, and in all cases of amputation at the shoulder joint in which the axilla was invaded so high that Wyeth's pins could not be used.

My friend, Prof. [name], said that he had had some cases of amputation at the shoulder joint, and that he had

been a pronounced diabetic. He had died of gangrene after the operation, dependent upon the diathetic condition and upon the prolonged strangulation. The second death had occurred in a woman of seventy-eight years. The strangulation had been very tight, and the bowel had been gangrenous at the time of operation. Rupture had occurred at the sulcus corresponding to the line of constriction, and death had taken place from exhaustion in the following twenty-four hours. The third death had occurred in a man of intemperate habits, who had had a hernia strangulated for thirty hours, and who had been subjected to forcible taxis before admission to hospital. So forcible had been the taxis that it had resulted in rupture of the bowel in two places. At the operation the scrotum had been found enormously swollen and black from effused blood. Twelve inches of the bowel had been gangrenous, and the gut had presented two openings. Dr. Ashhurst had removed the bowel and had performed a circular enterorrhaphy, but the patient had died thirty-two hours afterward from cardiac failure, without evidences of peritonitis. It was evident that in none of these cases had the result been in any way due to the operation.

Four times the author had operated for strangulated femoral hernia, with three recoveries and one death. In the fatal case the patient had died in a collapsed condition thirty-six hours after the operation. He had no particulars of the case, but there had been no evidence of peritonitis.

He had had one case of strangulated umbilical hernia which had terminated fatally. The patient was eighty years of age, and the strangulation had existed for a number of hours. The patient had died of peritonitis, which, as everybody knew, was particularly apt to occur as a complication after umbilical hernia, incisions into the upper portion of the abdomen being more apt to be followed by peritonitis than incisions in the lower portion.

The youngest patient on whom he had operated was a child, two years of age, with inguinal hernia. This case had ended in recovery. The oldest patient was the woman eighty years old, with umbilical hernia, just referred to.

Among cases of special interest he mentioned one of the inguino-crural variety, where the hernia, after coming down through the inguinal canal, did not pass into the scrotum, but turned up in the line of Poupart's ligament and passed outward along the groin. It was usually complicated, as it had been in this case, with an undescended testicle. In this case the hernia had been down six days when he had operated. He had been able by taxis to reduce a portion of the tumor, but, finding that there still remained a hard mass which could not be reduced, he had thought it right to open the sac and determine the exact condition. He had found that the hard lump was the testicle in a gangrenous state, either from a twist in the cord, or, as seemed more probable, from the taxis which had been practiced ruthlessly before the patient's admission to the hospital. He had excised the testicle and the patient had recovered.

He had operated in two cases of irreducible omental hernia. In these cases a tumor had been present in the femoral region for a long time, and, while there had been no evidence of strangulation, the weight and bulk of the tumor had given great annoyance, and the patient had been exposed to the possibility of a portion of the tumor coming down, or rupturing. He had found it felt just as if, especially in these cases, cutting away most of the tumor was sufficient to relieve the patient.

The patient of special interest in the treatment of hernia, let the society state the speaker intended to discuss, was a man of seventy, who had been operated on for a hernia, and who had been subjected to taxis before admission to hospital. The taxis had been so forcible that it had resulted in rupture of the bowel in two places. At the operation the scrotum had been found enormously swollen and black from effused blood. Twelve inches of the bowel had been gangrenous, and the gut had presented two openings. Dr. Ashhurst had removed the bowel and had performed a circular enterorrhaphy, but the patient had died thirty-two hours afterward from cardiac failure, without evidences of peritonitis. It was evident that in none of these cases had the result been in any way due to the operation.

some difference of opinion prevailed, and as to the advantages and disadvantages of Gay's method as modified by Fergusson, and as to the advantages or disadvantages of Petit's plan of operating without opening the sac.

Dr. Ashhurst said that, while he had reduced a good many strangulated hernias by taxis, while he believed that it should be the surgeon's first thought, and while, if practiced with care and skill, it was a safe method and one which would usually succeed when resorted to in time, yet he thought that, in the hands of an inexperienced practitioner, who saw but few cases of hernia, taxis was an unsafe procedure. Under such circumstances he thought that the patient would sometimes be safer with the operation of kelotomy than with taxis, for kelotomy was not a very difficult operation and not very dangerous if performed with caution, whereas taxis, while seeming to be very simple, yet, if employed with great persistence and force, might lead to the most serious consequences. His own cases of kelotomy which had resulted fatally had been mostly subjected to prolonged taxis. Taxis, therefore, he thought, had its limitations, and should be resorted to with great gentleness and with great caution, except in the hands of those surgeons who were sufficiently familiar with the anatomy and treatment of strangulated hernia to feel that they might use the method more freely and more systematically. It was, of course, known to the fellows of the Academy that its founder, the late Professor S. D. Gross, had maintained that very few cases of hernia required operation. He had prided himself that he had been able to effect reduction by taxis where others had failed; and such had undoubtedly been the case. In the hands of a man like Professor Gross, taxis was a safe procedure, but in the hands of the ordinary practitioner he believed that the line of safety for the patient would often be found in kelotomy rather than in a prolongation of taxis.

It was scarcely necessary to say that when taxis was employed it should be done with gentleness and with system. The ordinary method of pushing at the hernia was very uncertain, and was not only apt to do harm, but was almost sure not to do good. The rule that the last portion of bowel which had come down should be first returned was very valuable, and should always be borne in mind. Then he found, what he had been in the habit of speaking of to students as a kind of conjoined manipulation, a very useful mode of applying taxis, and he thought the safest. The neck of the sac is grasped by the thumb and fingers of one hand, while the other hand, spread out, exercises a combination of pushing and squeezing; and then by a kind of alternating movement, slightly relaxing one hand while with the other the pressure is increased, and if the hernia is reducible at all, it will go up. If no gurgling is heard in a few minutes, it is not likely that taxis will succeed.

As regarded the *rule of taxis*, the speaker had resorted to many modes of reducing hernia, but in seventy-three cases he had pretty much come down to two or three. Even the warm bath, which had been much resorted to formerly, he thought was seldom employed at present. At the Pennsylvania Hospital the practice has been to give a patient a hot bath over the hernia and give a moderate quantity of opium. When the resident physician was not able to reduce the hernia by gentle taxis, the warm bath was given, and the opium had been given. It should be pointed out that the warm bath is not a very reliable method of reducing hernia, and that the opium is not a very reliable method of reducing hernia. The speaker had found that the most reliable method of reducing hernia was by the use of taxis, and that the most reliable method of reducing hernia was by the use of taxis. The speaker had found that the most reliable method of reducing hernia was by the use of taxis, and that the most reliable method of reducing hernia was by the use of taxis.

use of forcible taxis. He remembered an instructive case in which Dr. Hearn had operated. The patient had been sent to the hospital after severe and prolonged taxis had been used. The constricted portion lay in the hernial canal, and he had been obliged to cut down on it at that point. It had been impossible to pass a grooved director between the constriction and the gut, so firmly had it been wedged. In two other cases he had seen the gut driven back and forced between the peritoneum and some of the layers of the sac, and in that way, while the physician felt that he had reduced it, he had only masked the trouble and made it more certainly fatal.

With regard to umbilical hernia he would state that he had had three cases and had never seen a patient die. He should be glad if the fellows would tell us their experience with umbilical hernia.

Dr. H. R. WHARTON thought that the most difficult point to decide in the treatment of strangulated hernia was the question whether or not to put the bowel back when it showed the marked effect of strangulation. In many cases where there was not absolute sloughing it was hard to decide whether or not a bowel whose nutrition was much impaired would recover. Within the past ten days he had had a case of femoral hernia where the color of the bowel had been very unfavorable. After dividing the stricture he had noticed some improvement in the color of the bowel, and he had put it back with some misgivings. The patient had progressed satisfactorily and without rise in temperature.

Another point that he had observed was that in cases where omentum was present in the hernial sac and prolonged taxis had been employed, the bowel was not in as bad condition as where omentum was not present. He thought that the presence of omentum might save the bowel from pressure.

A point which Dr. Ashhurst had not brought out, although the speaker knew that he was perfectly familiar with it, was the relative rapidity of the occurrence of dangerous strangulation in inguinal and in femoral hernia. In femoral hernia the strangulation was more dangerous in the same time than in inguinal hernia.

Dr. RICHARD H. HARTE asked Dr. Ashhurst's experience with Littre's hernia. He had seen two cases. One patient had been brought to St. Mary's Hospital after prolonged taxis, and the hernia was supposed to have been reduced. The symptoms had not subsided, and when he had seen the case the man was dying. At the autopsy it had been found that a small portion of bowel had been caught and strangulated. The second case had been seen at the Episcopal Hospital. In this case, too, an operation had revealed a small portion of the bowel which had been caught and strangulated. These cases were apt to be overlooked until rather late symptoms of strangulation made their appearance.

Dr. J. M. BARNES said in reply to Dr. Allen's question that he had had six cases of strangulated hernia and had had three patients die. A method of reduction that he had found successful was thought was worth mentioning. In these cases the strangulated bowel was irreducibly in the center of a mass of omentum. The usual knowledge of introducing the gut into the body was not present on the surface would be attended to. In a case of the kind which he had seen once, the patient had been given some ergoline extract and he saw the tumor and had lifted the abdominal wall, thus drawing the patient from the body. At the next attempt the gut had slipped out, and he had employed the same method to reduce it with success.

He had had the probability in question in a third instance. The patient was a woman fifty years of age with long-standing symptoms of obstruction. He had succeeded in drawing out the gut, but it had not returned to its place. He had then made an incision

in the section and had found a small knuckle of bowel in the femoral opening. The extent of bowel caught had not been more than three fourths of an inch. The patient had been quite fat, and in order to release it he had had to prolong the incision over to the right side. The bowel had been gangrenous, and in removing it, infection had probably taken place, for the woman had died forty-eight hours later. There were no marked symptoms of peritonitis. For hernia he should not consider this operation for an instant, but he did not know that the case had been one of hernia. After delivering the intestine he had put his finger in the femoral opening, and had tried to feel it from the outside, but had been unable to, owing to the amount of tissue over the femoral opening and the small size of the hernial sac.

Dr. JAMES COLLINS had nothing to add except to mention a little manœuvre which sometimes succeeded after taxis had failed, and that was to put the shoulders on the floor and draw the hips up, making taxis in this position.

The youngest patient on which he had operated was a child two years old, and it recovered. His oldest patient was eighty-two years old. He had operated in a number of cases with success, with the exception of a few at the German Hospital. In these cases the strangulation had existed for several days. He emphasized the necessity of opening the sac. In one case where he had opened the intestine he had found, on drawing down the bowel, another band about the intestine. He had seen the same thing in other cases.

Dr. WILLIAM G. PORTER emphasized the point made by Dr. Collins as to the necessity of drawing down the bowel. He had seen two cases where the bowel in the sac had been carefully examined and found all right and returned, and had been immediately followed by a gush of liquid feces. His explanation of these cases was that the strangulated portion had returned and a healthy portion of the bowel had come down.

Dr. SAMUEL ASHURST had seen a case like those referred to by Dr. Harte, and this had prejudiced him against the operation without opening the sac. Taxis had been employed and the tumor had been reduced, but the symptoms had not disappeared. The patient had died, and at the post-mortem there had been found a small portion of bowel still retained within the internal ring, not involving the whole lumen.

His experience had been that almost every case of hernia stood by itself. He did not think that he had seen a case which did not present peculiar features. It was this that made hernia one of the most interesting subjects in surgery.

Dr. THOMAS R. NELSON said that the question whether or not the strangulated bowel should be returned was a very important and often a perplexing one. He had several times been in doubt, but in all cases had returned the bowel after relieving the constriction, drawing down the bowel and searching for perforations, and noted that after bathing with hot water, the color of the bowel slowly returned. Another guide was the preservation of the luster of the peritoneal surface of the bowel. If the luster was still present, was no evidence that the vitality was not entirely destroyed.

He had had two cases of Littre's hernia, and the strangulation of the bowel. One had been in an elderly woman who had been brought to the hospital after prolonged taxis. There was obstruction of the bowel. The patient had been practically moribund, but at the earnest solicitation of the patient he had operated. The constriction had been found at the internal abdominal ring, and he had drawn out a portion of the sac. The patient had died with enteric fever. The second case occurred in a young man who had been brought to the hospital after prolonged taxis. He had found the strangulation at the internal ring, and he had drawn out a portion of the sac. The patient had died with enteric fever.

It would be expected that there would be a higher dorsal re-

tion of the back had been the part most frequently injured, and this part seemed to be that which had been most commonly the seat of contusions and sprains. As regarded the treatment of contusions and sprains of the back, he considered that rest in bed was a matter of the first importance, and in addition he had found that the pain and general discomfort of the patient was much diminished and the time of treatment much shortened by having the back firmly strapped as soon as the patient came under observation. The strapping of the back was effected by taking strips of resin-adhesive or of rubber-adhesive plaster two inches and a half in width, and long enough to extend half way around the body; these were applied so as to cover in the back, one strap slightly overlapping the other, from a point just below the junction of the last lumbar vertebrae with the sacrum to the lower ribs. These straps had often been removed at the end of two or three days, and the back had been restrapped if the pain and tenderness still persisted. The straps had usually been allowed to remain in place until the patient was up and about, without complaining of pain or discomfort in the region of the injury. In cases of severe contusion the straps often required renewal a number of times.

This method of treatment of contusions of the back had first been called to his notice by Professor Ashurst while serving as resident physician in his wards at the University Hospital, and since he had employed it he had entirely discarded the use of fomentations and stimulating lotions, which were generally recommended in the treatment of these injuries.

The treatment usually recommended in contusions and sprains of the back was warmth, frictions, stimulating liniments, anodynes, acupuncture, galvanism, and massage, and of these he thought massage was the most valuable, employed after the acute symptoms following the injury had subsided; but in the early stages of these injuries he was convinced that strapping would be found the most satisfactory method of treatment.

He had observed that the application of straps employed as above described, was usually promptly followed by relief of pain, and the fixation produced allowed the patient to move with more comfort, and he was very certain, after having employed this method of treatment in a considerable number of cases, that the time required for the recovery of the injured parts was much shortened. Most of the cases reported had been comparatively trivial injuries, and the patients had recovered in a short time, but even in the class of cases the speaker was, at a very intense for the first few days. In three cases bloody urine had been passed for a few days after the injury, showing that the injury had been severe enough to produce laceration or contusion of the kidney. Liddell,* in his very excellent article upon contusions and sprains of the back, speaks of the frequency of laceration of these organs when properly. Hows had been discovered upon the lumbar vertebrae, and upon the back. The recovery, so far as the speaker knew, in all of the cases reported had been satisfactory, except in Case IV. In this case the patient had developed some months after having the lumbar symptoms of treatment, and had been confined to bed for the back and lower limbs, and he had been told that the contraction of the muscles he had been working at the time of the injury. From what Dr. Wharton had said of the case, and from the fact that when it had been mentioned that the patient had been doing his ordinary work, the suit had been sent for a friend, and he was then told that the patient had been developed had not been severe, and could be treated in relation to symptoms.

In cases of severe contusions or sprains of the back, when

there was inability to stand or there was present great pain on motion, and where tenderness over the spine and a certain amount of fixation was present after the injury, he thought there was too much tendency to attribute the symptoms resulting to an injury of the spinal cord or membrane, which injuries when unaccompanied with fractures of the vertebrae were extremely rare; whereas the injury resulting to the muscles, ligamentous structures, and nerves, with perhaps the wrenching and laceration of the vertebral articulations, was perfectly possible to account for the symptoms resulting, and he agreed with Mr. Page that many of these cases were well described by the term "traumatic lumbago."

As contusions and sprains of the back were injuries which were often followed by the development of symptoms which were described as traumatic neurosis, or traumatic neurasthenia, it seemed to him that these were cases which should be carefully treated when they first came under the observation of the surgeon, for he was sure that many of these patients if so treated by rest and fixation for a short time would make more complete recoveries, and would be less likely to develop the symptoms above described. In cases of contusions or sprains of the back, in which symptoms of traumatic neurasthenia developed and gave rise to litigation, it was often difficult for the surgeon to estimate how far the original shock of the system following the injury was responsible for the symptoms presented. In many cases the objective signs presented left no doubt of the severe nature of the injury, while in other cases the symptoms complained of were mainly subjective in their character, and these were the cases which gave rise to the most troublesome litigation. It was often difficult to decide whether the symptoms presented were merely assumed or exaggerated for fraudulent purposes, or whether, without any attempt at deception on the part of the patient, injuries trivial in themselves might be unconsciously exaggerated, and be apparently productive of serious results. Although many severe injuries of the back apparently recovered without developing such symptoms as had been described, there was no doubt that the element of compensation for the suffering and disability from the injuries received played an important part in the exaggeration of these symptoms, and that expectancy might be justly credited with an important place in their exaggeration. In cases of serious disorder resulting from contusions and sprains of the back, often apparently trivial, the symptoms developing were usually progressive in their character, and soon there would become manifestly marked objective signs, such as paralysis, disturbances of the reflexes, loss of electrical excitability, disturbances of the bladder, loss of flesh, sleeplessness, etc., which placed the existence of morbid changes beyond a doubt.

Dr. James C. Jones, Assistant Surgeon, Department of War, with one exception. His habit had been to suspend the patient and then fix the back, not necessarily to lift him up, but simply to make the back straight. He regarded this as necessary to make the treatment ideal.

Dr. John A. Warner, He had often treated his back in treatment. Where the condition was one of contusion rather than of sprain, he commonly applied lead-water and laudanum, or some similar treatment, with the exception of a certain amount of rest, and then applied strapping. In severe cases, however, he had found that the strapping of the back, the treatment of the muscles of the back, and of the muscles of the back, was all that was required, and when there was a positive contusion there was, he thought, advantage in first using anodyne fomentations, and then strapping.

Dr. Joseph C. Stone, and others, had very many similar cases, and he had found that the strapping of the back, the treatment of the muscles of the back, and of the muscles of the back, was all that was required, and when there was a positive contusion there was, he thought, advantage in first using anodyne fomentations, and then strapping.

* International Encyclopedia of Surgery, Vol. IV, p. 100.

In these cases he thought that there was a certain amount of synovitis and arthritis between the end of the ribs and the vertebrae. In all these cases treatment by strapping had given immediate relief. If the patients were allowed to go without treatment they often went from bad to worse and had a long convalescence.

Dr. JOSEPH HEARN said that it might be of interest to refer to the diagnosis between lumbago and sprain in the back. If a person sprained his back he went about his work for an hour or two without any discomfort, but when he took a rest he could not get up. In lumbago the pain came on suddenly and continued.

Dr. WHARTON said that he had had no experience with suspension, as he had been satisfied with the use of straps.

In cases where there had been contusion with effusion of blood he had formerly used lead-water and chloride-of-ammonium lotion, but in his recent cases he had resorted to strapping, even when this condition had existed. In these cases the patients had experienced relief, and the pressure probably had limited the effusion of blood.

Dr. JOHN H. PACKARD exhibited some self retaining glass drainage-tubes.

Brain Tumor, probably Tubercular, in a Child, treated with Large Doses of Iodide of Potassium with Marked Improvement.

The President presented a patient for examination whom he had seen in consultation with Dr. Charles A. Groff. The patient, aged seven years, had exhibited the symptoms of a brain tumor which had been thought might be operable. Eye examination by Dr. Oliver had confirmed the diagnosis, and located the tumor in the posterior portion of the base of the brain. In view of the result obtained by this examination, it had been deemed advisable to try the curative effects of large doses of iodide of potassium, given in gradually increasing quantities; one hundred and three grains daily had been finally administered with decided amelioration of the symptoms and without any ill-effects from the use of the drug.

The history of the case was given by Dr. Groff as follows:

Elsie E., aged seven years. She had first come under observation in December, 1892, and complained of severe headaches, which occurred almost daily and lasted for hours, during which the child had been compelled to lie down until sleep had come to her relief, apparently as the result of exhaustion. This had existed for two years, gradually becoming worse.

The father, a painter by trade, had never been sick in his life, and had never had syphilis; the mother was strong and healthy, and had no knowledge of having been sick.

There was a younger child, less than two years old, born with epino virus, which difficulty had been almost entirely cured by the use of strapping and bandages.

An examination of the patient at the date mentioned had shown at once defective vision and a slight paralysis of the right side, caused by the pressure of the tumor. She had been put upon strapping, and had seemed to gain some benefit from it, but she had not been able to walk alone, and had no improvement in vision and hearing power, and no further benefit had been obtained. She had been sent last to a second oculist, who had diagnosed a brain tumor and said that nothing could be accomplished.

For some time she had been put upon strapping, and had gained some benefit, which had been followed by a relapse. After some delay she had been given strapping. At this time the condition had become so serious, that the condition at the strapping had been considered, but she had been told that nothing could be accomplished.

Dr. M. M. had seen the patient on August 27, 1894, and had found her condition very similar to the condition at the strapping.

treatment, and had advised the increase of the iodide of potassium. This had been done, ten grains having been added to the daily dose every two weeks until the child was taking a hundred and three grains daily. This point had been reached in November, 1893, and had been continued until February, 1894, when the amount had been decreased to ninety grains daily, which quantity she had been taking up to the present time. As the remedy had been increased, there had been evident improvement in the condition of the patient. The headaches had been much lighter in character, and occurred at markedly increasing intervals until now they had practically ceased. The paralysis was much less marked, and Dr. Charles A. Oliver, who had made repeated examinations, said her vision was improving.

Appended is the report of Dr. Oliver showing changes occurring under the administration of the large doses of iodide of potassium.

Ophthalmic Examination, September 26, 1893.—Neuro-retinitis of a soft edematous type, the left nerve head being the more swollen; both the retinal arteries and the veins were reduced in size, especially the latter; the left iris failed to respond to the strongest light stimulus; the right iris seemed to respond at times; the vision of the right eye was reduced to a doubtful light perception in all portions of a considerably contracted field; the vision in the left eye was still further reduced to a faint recognition of light from the temporal side. These ocular conditions, with the general history of the child, had given a diagnosis of brain tumor with enlargement of the ventricles; the supposed neoplasm having been probably tubercular in character and situated in the posterior portion of the base of the brain (cerebellar?).

On October 18, 1893, there had appeared to develop a doubtful left homonymous hemianopsia, the nerve heads shrinking. No tubercular deposits could be recognized in any part of the fundus of either eye.

The irides had gradually and interchangeably bettered in their reactions, the fields of light perception had obtained both subjectively by the patient's recognition of the position of the light, and at times objectively by the movement of the irides, until at the present time they seemed to respond much more freely than when the patient had first been seen. Vision, which was reduced to perception of light, varied extremely upon different examinations, though relatively it was slightly better than when the patient had first been seen, the examination at the last visit having reversed the comparative areas of recognition in the right and left fields. Ophthalmoscopically, the nerve heads were considerably shrunken and had become markedly atrophic.

New Inventions, etc.

AN IMPROVED STETHOSCOPE.

By RICHARD W. WILSON, M. D., LL. D.,

PROFESSOR OF CLINICAL MEDICINE AND THERAPEUTICS, AT THE NEW YORK HOSPITAL, AND CHIEF OF CLINICAL SURGERY, ALBANY HOSPITAL, AND ST. MARY'S HOSPITAL.

The best type of stethoscope is, beyond all argument, the Campanoid. The examples at hand in the shops, however, leave

Presented at the May, 1894 meeting of the Harvard Medical Society.

balsams, and by local treatment of the urethra by means of bougies or injections, this gloomy condition may be removed. Sometimes the continuance of this discharge is due to the existence of small points of ulceration or patches on which granulations have developed, or to the presence of disease in the posterior part of the urethra which continually infects the parts in front and against these conditions general medication is helpless. These things require special instruments and experience in the use of them, and, if the ordinary treatment fails, the patients should be sent to a specialist, for, above all things, continues the author, it is essential that they should be cured.

Croelin in the Treatment of Leprosy.—The *China Medical Missionary Journal* for March publishes accounts of two cases of leprosy. The first patient, a young man seventeen years of age, had his arms, legs, and face covered with large, prominent leprosy nodes, some of which had ulcerated. The skin over and around the nodes was anæsthetic, and beneath the skin innumerable smaller nodes could be felt. He was put under the influence of ether, and about fifty of the larger nodes were removed by making an incision in the skin and scraping with a Volkmann's spoon. The ulcers also were scraped and all the wounds were dressed with lint saturated with a mixture of croelin and glycerin. They healed rapidly, and afterward the whole skin, wherever nodes could be felt, was rubbed every day with the same mixture. This treatment was continued for nearly three months, and the patient was dismissed with no trace of the disease, except scars and a few anæsthetic patches on his arms and legs. The second patient, a man twenty-eight years old, noticed that his eyebrows had begun to fall off, and applied for admission into the hospital. He showed the characteristic appearance of leprosy: the upper lip was very thick, the outer half of each eyebrow was gone, the margins of the eyelids were thick and hairless, there was slight ptosis, and there was constant lachrymation. *Lepra bacilli* were found in fluid taken from his face. The fingers were numb but not distorted. The mixture of croelin and glycerin was rubbed into the affected parts every day for about two months, and electricity was applied to the eyelids and to the hands. The improvement in this case, the author says, was slow, but satisfactory. The eyebrows began to grow, lachrymation ceased, and the lip was reduced to its normal size. The ptosis continued, and the eyelids were not very much improved in appearance, owing to the difficulty of applying the croelin to them, but the fingers regained their sense of feeling, and altogether the patient was much improved. The author saw him about a month after he had left the hospital, and up to that time there had been no return of the disease. The author thinks that if leprosy is treated in this manner, it can at least be checked, but whether it can be exterminated remains to be proved.

Cancer Houses and their Victims.—The *British Medical Journal* for June 26th publishes an article on this subject by Mr. J. J. Power, of London, in which he says that attention has never been called to the interesting fact that cancer has very probably originated in the cancer houses. He cites the following instance, which seems rather to him to be the physician's error of observation that has come as a illustration of the point. A woman, fifty-seven years old, lived in a certain house for thirteen years, and was the subject of the stomach. Another woman, who had lived twenty years in the house, succeeded to her, and she died of cancer of the stomach, and died of cancer of the breast a few days later. Her husband, a woman, and seven other persons who had lived in the house, but not being the subject of cancer of the stomach, and during about seven years afterwards. These women and apparently men, in perfect health before coming to

housekeeper in the establishment. They were not related. In another house, within a period of fourteen years, four persons were affected with cancer, three of whom died. Mr. Power quotes from Dr. Fabre's treatise on *The Contagion of Cancer* the following observation by Dr. Mollière: "There is a house in Lyons which has long been occupied by well-to-do people. In 1873 the owner, who lived on the first floor, died of cancer of the stomach. Four years later a tailor, who lived in the *entresol*, died, also of cancer of the stomach. The porter died three years later of the same disease, also affecting his stomach. Finally, a man who lived on the second floor was attacked, two years after the death of the porter, with cancer of the cervical glands and died within a year. Thus in ten years four deaths from cancer occurred in the same house."

These and other cases cited by the author may be, he says, and probably are, mere coincidences, yet they may point to a more specific origin of the disease. It is impossible to explain them as yet, but such local outbreaks have to be taken into consideration in all investigations with regard to the causation of cancer. The cases, however, are so rare that it is better to record them as they occur than to argue as to their origin, for, he says, any conclusions arrived at now would be based only upon insufficient premises, and would therefore be worthless.

A Case of Serious Epistaxis.—At a recent meeting of the *Société française d'otologie, de rhinologie et de laryngologie*, a report of which is published in the *Annales des maladies de l'oreille, du larynx, du nez et du pharynx* for June, M. Miot related the following case which had come under his observation, and was, in his opinion, a unique one because of the tenacity and frequency of the hæmorrhages, the effect they had on the patient, and the varieties of treatment employed. He believed that he had obtained a cure by the employment of a treatment which had not been used in similar cases: The patient, a young man of twenty-one years, had been subject from the age of fifteen months to attacks of bleeding from the nose which occurred every two weeks, then every week, and finally twice a week. When he was five years old he had had a severe attack which resulted in syncope, and it was impossible for him to eat. Iron chloride was prescribed and seemed to bring about some amelioration, but a year later the attacks returned and persisted at regular intervals up to the age of eleven years. At this time the hæmorrhages increased in frequency and weakened the patient more and more. The case was diagnosed by a specialist as one of varicosities of the nasal septum. The treatment consisted in cauterizing the dilatations, and in using insufflations of iron chloride; but this medication had no permanent effect and the patient became weaker and was soon in the last stages of cachexia. Dr. Miot was then consulted, and he found the child pale, bloodless, and incapable of making the least movement without bringing on syncope. A small stream of blood oozed from the nostrils, which were filled with clots, and the author attempted an examination in order to ascertain the cause of the bleeding, but at the least touch the hæmorrhages and syncope followed each other in quick succession. Finally, however, the author was able to clear out the clots from the nasal cavities, and he then applied a tampon of wadding saturated with boric acid and Boujeau's ergotine. The bleeding stopped, and the following treatment was then prescribed: 1. A tampon of cotton saturated with ergotine to be applied every twenty-four or forty-eight hours. 2. Tonics. 3. Complete rest in bed for several days. The bleeding diminished in frequency for some days, but very soon it began again, although at longer intervals, and the patient's condition was so wretched that it was imperative to try some other remedy at once, and the following was resorted to: 1. Layers of cotton satu-

rated with ergotine, with sténolol or a watery solution of aniline pyrine applied to the septum every day at the least. 2. Nasal douching with boric-acid water two or three times a day. 3. Preparations of iron, manganese, and sodium sulphate, as these gave the best results with regard to the general condition. 4. Strict hygienic conditions. This treatment was rigorously followed, and gradually the general condition improved, strength returned, and the patient could eat. Dr. Miot then decided to begin the curative treatment, and employed electrolysis, with which he obtained the best results, and at the end of several months recovery was complete. The author concludes from this that when there is an erectile or varicose tissue of a certain extent to deal with, electrolysis is the best means. The electrode, in the form of copper or silver needles, is introduced into the hæmorrhagic tissues. The number of the needles varies according to the extent of the surface affected, and from two to five needles at each application generally suffice. The intensity of the current is from sixteen to twenty milliamperes, and the sitting lasts from eight to ten minutes. The positive electrode should be large and applied to the side of the face corresponding to the nasal cavity affected. Silver and copper needles seem to exercise a more energetic action, although the substance of the needles is not a matter of great importance. M. Miot has had occasion to employ this method in two other cases of obstinate bleeding from the nose, and in each case has obtained the same results.

Abscess of the Seminal Vesicles.—The *Journal des praticiens* for May 23d contains an abstract of an article written by Dr. Kélik at a recent meeting of the *Académie de Médecine*, in which he presented the case of a young man twenty years old. At the beginning of January, 1894, the patient was treated for leucorrhœgia, and on the 20th orchitis developed. The man's temperature was 101·3° F. in the morning and 104° in the evening. By the rectum, the region behind the prostate, at the level of the seminal vesicles, was soft to the touch and sensitive to pressure, which, when persisted in, caused a discharge of pus from the urethra. The patient complained little of the region attacked, but often, says the author, there is a sensation of pressure, sometimes with sharp radiating pains, painful defecation, and painful ejaculation of reddish-brown semen, pus, and blood. Dr. von Dittel opened the abscess by making a perineal incision. The rectum was bent down to the left, the *coercyx* cut off, and the suppurating part cleared out and immediately washed. After several days, during which there was fever, the patient recovered, and at the end of a month he was cured. This method, remarks the author, seems preferable to others, because it can be carried out antiseptically, which can not be done with simply puncturing or cutting the rectum and draining it.

A Legal View of Physicians' Remuneration.—A writer in the *New York Journal of Commerce* on Dr. William A. Hammond's article, *What Should a Doctor Be Paid*, published in the *Lawyer* of the *New York American* last April, reporting Dr. Hammond's reference to the willingness with which most men would go to prison for a few hundred dollars, says among other things: "The fact that a man will go to prison for a few hundred dollars is a very good thing, and it is a very good thing that a man will go to prison for a few hundred dollars."

We are told that this "business plan" for a business is the essential part of Dr. Thompson's contribution to society that expected other businessmen to imitate. The disclaimer that is being used here for the first time in the book, as to the performance of the theory, seems to be only a halfhearted gesture of the 1911 edition, rather than a complete and total disclaimer for a new and not-comparable, transformed, or the company.

tive seriousness of the service and the standing and experience of the doctor or lawyer rendering it.

"Dr. Hammond draws evens comparisons between fees of physicians and those of lawyers, which latter often are to an extent determined not by intrinsic standards, but by the *rem* involved. This distinction, when it exists, arises from the nature of the *rem* itself. Where rights of property are the only thing concerned in a legal proceeding, it is not improper that the value of the property gained or protected for a client should enter as an element in the problem of determining the proper remuneration. In cases where it is allowable for lawyers to undertake business on contingent fees, the justice of a proportionate rate of compensation will be quite generally recognized. Ordinary collection business obviously falls under the same rule, as does also conveyancing, where a principle not unlike that of insurance comes into play. Forms of legal business that are more analogous to medical services are criminal proceedings and matrimonial cases. The contention has been made, and even judicially sanctioned, that it is legitimate for a jury to gauge the value of legal services in defending a person on a criminal trial according to the latter's wealth, which proposition we deem unsound in principle and inevitably tending to make legal practice a mercenary system of ransom or tribute. The temptation of an advocate to perform unprofessional acts and entirely lose sight of the proper restraints of an officer of the court, in defending a rich rogue on a criminal charge, would obviously be greatly increased if the counsel realized that success would legally entitle him to a certain proportionate share of the client's fortune, no matter how large it was.

"One passage from Dr. Hammond's paper, however, offers a suggestion toward the true rule for fixing charges for professional services which are purely personal in their nature. He says:

“The value of medical services is always great, and it is only the rich who can properly compensate the physician who renders them. When the same services are given to a poor person, it is impossible that they can be adequately rewarded, and hence smaller fees are cheerfully received. It is really not that the rich are charged more, but that the poor are charged less. It would seem right that medical fees should be arranged upon the basis of the patient being worth a certain amount of money. If a patient is worth \$10,000, and the fee is \$100, the fee should be adjusted accordingly, being more or less as the wealth of the patient was greater or less than the sum fixed upon.”

In dealing with rich patients and clients, physicians and surgeons, and lawyers acting in cases not involving specific property, should make out their bills not commensurately with the wealth of their employer, but simply on the basis that he is rich enough to pay whatever is right. The charges should be fixed according to the practitioner's standing and experience and the amount of labor involved, the customary rates of practitioners of equal standing being taken as a guide and a possible corrective. This general rule would not preclude the acceptance of smaller fees from poor people, but it would debar a practitioner from charging more wealth than his neighbor. A physician or lawyer who has been successful in securing such a position will find it profitable to keep up his standard of living at the level of the average man.

The Growth of the Diphtheria Microbe—The more the

only when the growths contain the Klebs-Löffler bacillus has brought to light a lack of uniformity in the growth of this microbe. Dr. E. Klein writes in the April number of the *Quarterly Journal of Microscopical Science* that in the diphtheritic membrane, in which the progress of the disease is still active, the diphtheria bacilli abound, not only in the characteristic form, but also with the protoplasm segregated into spherical, cubical, or cylindrical particles, with a knob-like or club-shaped enlargement of one or both ends, sometimes of great size and containing vacuoles. After being from twenty-four to thirty-six hours in agar culture, when the growth is in its initial and most active phase, large numbers of the bacilli occur which are shorter or longer threads with marked segregation of the protoplasm and with terminal knobs. A subcutaneous injection of a virulent culture of the *Bacillus diphtherie* into a cow produced a deep necrotic tumor containing connected masses or clumps in the growing margins of which Dr. Klein noticed the diphtheritic bacilli appearing in the form of threads with spherical or oval swellings and conspicuous terminal knobs strikingly resembling the ends of growing hyphæ. The subjacent muscular fibers were being gradually destroyed by the growth of these threads into their substance. In sections of the tumor, stained with a mixture of eosin and methyl blue, the growing threads are blue, contrasting with the reddened muscular substance, and the appearance is convincing that the threads are forms of active growth and not of involution. Dr. Klein has isolated by culture the diphtheria bacillus from the milk of cows successfully inoculated with this microbe, and in the gelatin cultures the young colonies were almost entirely made up of thread-like forms with terminal swellings. Though the Klebs-Löffler bacillus under many conditions conforms with what corresponds to a typical bacillus, these threads, with the local accumulation of their substance, and with the terminal knob-like or club-shaped enlargement of their protoplasm, do not harmonize with the fundamental character of a bacillus, but rather suggest a close alliance with the form of a mycelial fungus.

The Experimental Inoculation of Warts.—The *Journal de clinique et de thérapeutique infantiles* for June 21st publishes an article by Dr. G. Variot, who had observed in a child, ten years old, typical warts on the back of the hands and pedunculated papillomatous on the eyelids. The author concluded that there had been self-inoculation caused by friction, the child having been in the habit of rubbing the eyelids with the fingers. This child had been brought to a dispensary, where two medical students were present with the author. He pointed out the multiple localization favored inoculation, and he proposed to these students that they should become inoculated in order to remove all doubt, to which they consented. An incision was made in a small flat wart on the child's hand—one that appeared to be still in its first growth, and on which the papillary protuberances were not distinct. After washing away the blood and absorption of absorbent cotton, the point of an ordinary needle was thrust into the surface of the wart, and then with this needle several punctures were made in the skin of the student's thumb. The punctures were very superficial. Nothing occurred from this in the case of the younger student, but the medical student, the older one, noticed that the epidermis, where the punctures had been made, had become thick and somewhat yellow. There was a redness of the skin to the depth of the punctures in effect the outline of a white scar (distinct). A week later he discovered a couple of hard and small nodules on the skin of the thumb were pointing to that of the first. In consequence the punctures became covered with small pustules and had a typical white top. A month later the

author made an examination and found an excrescence of three millimetres in diameter, the surface of which was covered with horny protuberances which became more apparent when the epidermis was scratched. The consistence of this small mass was hard, and, on pressure, it was somewhat painful. There was no redness or any inflammatory reaction of the derma. The student's general health was good.

The author quotes the following from M. Besnier's annotation on Hebra's and Kaposi's work on the bacteriology of warts: "Cultures of microbes of warts on agar-agar have given greenish-yellow masses. The warts obtained by inoculation have not yet been examined under the microscope, but the examination of preparations makes it even now probable that these warts really represent common warts. With these cultures ten inoculations were made on four animals, and two yielded satisfactory results. About fifteen days after the inoculation, warty excrescences were discovered of about the size of a grain of hempseed, somewhat flattened, and brownish in color."

The value of inoculations made with cultures is above all criticism, but Dr. Variot thinks that those made directly with the lymph taken from the wart are of equal value.

Microbes inoculated in the epidermic layer multiply slowly, and in some instances more than two months had passed before an appreciable change of the epidermic layers and a hypertrophic reaction among the papillæ had been observed. Whether the development of warts experimentally inoculated is also always slow, the author says it is impossible to say, judging from the single instance which he has related. If similar experiments have already been made by other physicians, the process of the evolution of warts can be compared and certain conclusions formulated. It is certainly an established fact that warts are self-inoculable and capable of inoculation from one person to another.

The prophylactic measures which the author had prescribed, in the *Journal de clinique et de thérapeutique infantiles* for December, 1893, for avoiding the propagation and spread of warts should be strictly observed.

It is necessary, he says, to watch warty children carefully, to see that they do not rub or scratch the skin on the face or on the body with their hands, and in schools children should avoid coming in contact with those who have warts.

The New Bloomingdale Asylum.—The following announcement has been issued by the Society of the New York Hospital:

"To the Medical Profession and Friends of the Institution: The present expectation is that the medical work now carried on in the Bloomingdale Asylum at 117th Street, between Amsterdam Avenue and the Boulevard, New York city, will be transferred during the present season (the women in August and the men in September) to the new Bloomingdale, White Plains, Westchester County, N. Y., where for the last two years an institution of the most modern and liberal character has been in preparation.

"It is confidently believed that the new Bloomingdale, White Plains, will contain all essentials for the best care and treatment of that class of the insane among which the work of the society has lain for so many years. The new buildings are of the pavilion type, loosely grouped together, of a cheerful appearance, and are situated upon an elevation from which pleasant inland views are obtained on all sides. They are in the midst of extensive grounds, well adapted to the outdoor enjoyments of the patients. The immediate surroundings of the institution will be comfortable and attractive. Elevators, electric lighting, many single and connected rooms for the individualizing of cases, special department for hydrotherapeutics, electro-thera-

Lectures and Addresses.

LECTURES ON THE
DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M.D.,

PROFESSOR OF MEDICINE, JOHN HOPKINS UNIVERSITY.

LECTURE VI.—TUMORS OF THE KIDNEY.*

NOWHERE is the close interdependence of medicine and surgery better illustrated than in the diagnosis and treatment of tumors of the kidney. A very large proportion of the cases come first under the care of the physician, whose province it is to recognize the condition; but to do justice to his patient he should be thoroughly familiar with the advances which have been made in the department of renal surgery. Let me first call your attention to the diagnosis of certain conditions associated with—

I. MOVABLE KIDNEY. (a) *Errors in the Diagnosis of Movable Kidney.*—I have no statistics to offer with reference to the frequency of movable kidney, but throughout the session you have had many opportunities of noting its commonness—so common, indeed, that we are never without examples in the wards. A majority of the cases present no symptoms whatever. Others complain much of dragging pains in the back, with neuralgia, epigastric distress, and general nervousness; many of neurasthenia with dyspepsia; and one often finds, particularly in women who have borne children, the condition to which Glénard has given the name *enteropostosis*. In a thin person, male or female, who presents the general features of neurasthenia, you will be almost certain to find, on examination, mobility of one or other, or of both the kidneys. Inability to lie comfortably on the left side, and paroxysmal attacks of pain such as I shall describe in a few moments, are less frequent symptoms. It is difficult really to determine how far all these features are dependent on the renal condition. It is quite possible that the pains and uneasy feelings may be due to stretching and tension of the tissues in the neighborhood of the great abdominal nerve plexuses; but one not infrequently meets with cases of the most extreme mobility without any symptoms whatever. It may be that, in persons with a debilitated and badly-regulated nervous system, the tension caused by the dragging of a movable kidney may be at once felt, just as many persons find the first indication of physical lagging in subjective sensations of the movement of the heart, of which in health we are not cognizant. The text-books and monographs now contain a full and satisfactory account of the condition, but I wish to call your attention to some less widely recognized features in connection with it.

While in the great majority of all cases movable kidney is asymptomatic, there are cases in which the condition is fully symptomatic. You will remember that in 1885 we made a somewhat serious mistake, and thought that an unusually mobile female Abroad was a movable kidney.

A more frequent error is the mistaking of it for a dilated gall bladder. I have already alluded to this, and in *Lecture IV* have spoken of the points to be attended to in the diagnosis. Here I may mention a case of a good deal of interest in which this error was made, and the operation for dilated gall bladder performed by Mr. Tait. The patient, a doctor from California, consulted me in 1888 about a lump in the abdomen, the nature of which had puzzled a large number of physicians. It had been present for ten or eleven years, and had appeared first after a somewhat severe attack of sea-sickness. He had suffered a great deal with nervous troubles and dyspepsia, and when I saw him there were signs of dilatation of the stomach. The position, mobility, and general characters made me feel tolerably certain that the tumor was a movable right kidney, and with this opinion the late Dr. Agnew coincided. The diagnosis relieved his mind very much, and he improved, so far as nervous symptoms were concerned. Subsequently he grew worse, and in the spring of 1890 he consulted Mr. Tait, who diagnosed dilated gall bladder, and made an exploratory incision. The gall bladder was normal, and the kidney, so he stated, was *in situ*. Subsequently the patient came under the care of Dr. C. O. Baker, of Auburn, N. Y., who found the tumor very evident, made a diagnosis of floating kidney, and performed nephrorrhaphy, with great relief to the patient. The case is reported in the *Medical Record* for May 14, 1892. The patient died in September of this year (1893) of empyema, and in the post-mortem notes, which were very kindly sent to me, the statement about the kidney is: "Right organ in normal position, held by firm union; nephrorrhaphy had been performed for floating kidney." There is no mention made of enlargement of the gall bladder.

With very pendulous and lax abdominal walls and an unusually mobile right kidney there may be at first difficulty in separating clearly the right lobe of the liver and the kidney. In the following case I was at first in doubt:

CASE LVII. *Movable Kidney, associated with a tumor of the Right Lung.* *W. A. T. M. D.,* *Professor of Pathology, Johns Hopkins University, Baltimore, Md.* *History.*—A female, 40 years of age, consulted me in 1891, on the subject of a tumor of the right lung. She had been troubled for some time with a lump in the back, and a general feeling of uneasiness. She was pale, and had a nervous, irritable, and anxious expression. On examination, a movable kidney was found, and a tumor of the right lung was also detected. The patient was treated with cod-liver oil, and the tumor of the lung was removed by operation. The patient recovered, and the movable kidney was found to be in its normal position.

Remarks.—The movable kidney was found to be in its normal position, and the tumor of the lung was removed by operation. The patient recovered, and the movable kidney was found to be in its normal position.

* Communicated to the Academy, December 10th, 1893.

of the abdomen. The attacks recurred with great severity throughout the winter of 1879-80. The patient lost weight and the diagnosis of a new growth was made. In the spring of 1880 she consulted in New York the late Dr. A. S. Flint, who agreed with Dr. Howard and Dr. Campbell of the very serious nature of the case. Throughout the year the attacks recurred, and she lost in weight from one hundred to seventy to one hundred and twenty pounds. In the spring of 1881 she again went to New York and consulted Flint and Van Buren. As she was at this time very much thinner, a more satisfactory examination of the abdomen could be made. Van Buren at once suggested that the tumor was a movable kidney, with which he stated that he had frequently met with paroxysmal attacks of severe pain, particularly in gouty persons. He advised a very strict diet. The relief of mind was naturally very great, and the patient began at once to improve, gaining rapidly in weight. The paroxysms reduced in frequency, and for years she remained well, having at intervals, particularly if she committed any indiscretion in diet, recurrences of the severe pain.

The following cases have been recently under observation:

CASE LXIX. *Enteroptosis; Movable Right Kidney; Severe Renal Crises.*—Susan S., aged forty-six years, admitted January 13, 1893, complaining of agonizing pain in the abdomen and back, and a lump in the right side. She was married at twenty-three; has had nine children, no miscarriages; menopause two years ago. Of late years she has been very nervous and is often irritable and depressed. At the time of the menopause she had pains in the back, and once the head was drawn to one side for a few days. Until two years ago the pains were of a dull aching character, but at this time she noticed a lump in the right side, and the pains became much more intense. The attacks now come on without warning and are so severe that she becomes helpless. They last for several hours, and though she never loses consciousness, they are so agonizing that for a time she can not speak. On two or three occasions she has fallen down. She gets cold, sweats a good deal, feels nauseated, but has never vomited. The pain is chiefly in the right side, and the lump becomes, she says, sensitive and larger. The attacks have recurred every two or three months. The last one was four weeks ago. On several occasions after very severe attacks the urine has been dark-colored. She has never had jaundice. The patient is a well-nourished woman; lips and mucous membranes of good color; temperature normal; examination of heart and lungs negative.

The abdominal walls are greatly relaxed, and the much-scarred skin can be grasped in large folds. On the left side the kidney can be felt readily on deep inspiration. On the right side, extending outward to within 3-5 centimetres of the middle line, and downward at least 8-5 centimetres from the costal margin, is a smooth, rounded mass, very freely movable to the right. It is superficial and seems to emerge directly from the ribs. It depends with expiration, and when the patient turns on the left side, it is far over beyond the middle line, and can be lifted with the fingers beneath it. It is smooth on the surface and is stated to seem to emerge directly from between the costal margin. To the left it can be felt beyond the middle line. The lower edge is rounded, but the tumor is not to be placed beneath it. It is evident that this mass is a compressed and somewhat flattened kidney. On deep inspiration, patient deep pressure opposite the point of the tenth rib, the right kidney can be readily felt behind and separated from the liver, and on deep inspiration it moves downward and can be readily grasped.

We had a good deal of discussion about the nature of this large flat mass in the right flank. It felt very superficial, smooth, and we thought at first it might be an enlarged and movable kidney, but repeated examination seemed to indicate that it was the liver, somewhat movable and tilted forward, owing to the relaxed condition of the abdominal wall. The following note was made on the 19th: When the patient lies on the left side the hepatic flatness does not begin in the anterior axillary line until the ninth rib; when on her back it begins at the eighth. In the nipple line, when she is on her back, the flatness begins at the seventh rib, and apparently falls an inch lower when she is on her left side. The border of the mass can be felt more distinctly in the nipple line, and suggests, taking into consideration the fact that one feels below it the kidney sliding backward, while near the umbilicus there is a sharp border, the existence both of a movable kidney and a movable liver.

The patient remained in hospital for nearly four weeks and gained in weight. She was greatly relieved by our statement as to the nature of her case. She had no attack of severe pain while under observation. The character of the attacks suggests the renal crises common in floating kidney.

The following case is, I believe, a very typical instance of Dietl's crises, and is interesting also from the protracted course and the intensity of the recurrences:

CASE LXX. *Movable Kidney; Renal Crises at Intervals of Seven Years.*—Dr. X., aged forty-three years, seen October 18, 1893, complaining of attacks of agonizing pains in the abdomen, which have recurred on and off for seven years. The patient has been a very healthy man, of good habits, and has for twenty years been engaged in a very laborious country practice. At the time of the onset there was a great deal of typhoid fever in his district, the roads were very bad, and for seven weeks he was in the saddle constantly. The first attack, which was of a very agonizing character, came on when he was very much fatigued, and was so severe that he nearly fainted and required morphine. He had no vomiting and did not pass any blood in the urine. Since that time the attacks have recurred, sometimes two or three in a week, sometimes only one in six or eight weeks. He has never vomited in them, though sometimes the intensity of the pain makes him nauseated. The bowels are regular and he has never had jaundice. He never can tell exactly when the attack will come on. It usually begins abruptly, and the intensity of the pain is such that he often has to take chloroform. The attacks last from a few hours to the greater part of a day, and, in passing away, leave him a little exhausted and with a feeling of soreness and aching. The pain is most intense in the right flank and extends toward the navel and to the spine. He does not think that any tumor develops at the time, but the muscles of the abdomen are tightly contracted and the right flank is sensitive. He has noticed in very many of the attacks that he micturates freely, and the amount of urine is increased at the time. He has never been unconscious, and in the intervals of his attacks has never had any serious disease, or the slightest change in his health.

The patient is a robust man, of stout muscular build, and strong, though he is now in the declining years of his life. He is a native of the county of Devon, and has been in the United States for the last twenty years. He is a native of the county of Devon, and has been in the United States for the last twenty years. He is a native of the county of Devon, and has been in the United States for the last twenty years.

The patient is a native of the county of Devon, and has been in the United States for the last twenty years. He is a native of the county of Devon, and has been in the United States for the last twenty years. He is a native of the county of Devon, and has been in the United States for the last twenty years.

can be also readily felt just below the margin of the liver. The left kidney is not palpable.

These renal crises constitute perhaps the most distressing symptoms of movable kidney, and they are, I think, very much more common than we are led to suppose. The knowledge of their existence is important, as the attack may be so severe as to simulate peritonitis. The cause of the symptoms is not at all clear. The terms which have been used, *Einklemmung* by the Germans, and *étranglement* by the French, are based upon the view originally expressed by Dietl, that it was a condition of strangulation or extreme engorgement caused by a twist in the vessels of the floating kidney. Dietl thought that about the moving organ there was a local peritonitis. The explanation which passes current at present is more reasonable, namely, that the condition is due to a kink or twist in the upper part of the ureter, with retention of the urine in the pelvis and calices, and a production of a transient hydronephrosis, the severe, agonizing pain being caused by the distention of the tissues.

II. INTERMITTENT HYDRONEPHROSIS.—With the exception of a remarkable case of the rare congenital form, upon which my colleague Halsted operated in this hospital three years ago, I had never seen—to recognize—a case of intermittent hydronephrosis. During the present session three examples have come under my notice. Let me first read to you the notes of the cases:

CASE LXI. *Intermittent Development of Large Tumor on the Left Side.*—Mrs. F., aged forty-three years, seen with Dr. Finney, September 9, 1893, complaining of trouble in the left side. She has been a healthy woman; has had four children; never had any trouble after her confinements, and she does not think that she was unusually large during her pregnancies. She has, on the whole, enjoyed very good health. In April last she stumbled over a slop jar and wrenched her back, but she did not feel it very much at the time. Early in May she had the first severe attack of pain in the left side, which Dr. Finney attributed to her first and casual renal colic. There were some paroxysms at 6 and 9 a. m. They were evidently very severe, as she was bent over with the pain and had severe vomiting. The pain was not bloody, and in a few days she was better, but one evening she was surprised to find a lump in the left side, which has been present at intervals ever since. It has not been especially painful, but is a little uncomfortable and has caused some trouble in sitting on and moving about. The lump is about the size of a fist, and is not very firm. It is not very tender, and she has had no special tenderness. She has not lost in weight. She is quite positive that the lump in the left side is not a tumor, but is a swelling of the kidney, and that it is not a tumor. She has had no special tenderness. She has not lost in weight. She is quite positive that the lump in the left side is not a tumor, but is a swelling of the kidney, and that it is not a tumor.

Present Condition.—Well-nourished, healthy looking woman of medium height. The abdomen looks natural; no special prominence. When she turns a little on the right side there can then be seen a projection in the left flank just above the ilium, and between the tenth rib and the anterior spine there is felt a prominent solid mass, which above lies close beneath the ribs, while anteriorly it feels superficial. It can be readily grasped between the hands and moved to and fro. When she draws a deep breath it does not give one the impression of coming out from beneath the ribs and is not much depressed. No sharp edge can be felt, but it is everywhere rounded in outline.

Percussion in the splenic region is clear, and beneath the level of the eighth rib there is a flat tympany in midaxillary line. As she turns on the right side the mass comes forward and produces a bulging beneath the skin. It is tolerably firm and elastic, but fluctuation can not be obtained.

The edge of the spleen is not palpable; the liver dullness is not increased; the edge can not be felt. The right kidney is just palpable on deep inspiration. Examination of the thoracic viscera is negative.

The patient was requested to make a careful estimation of the urine each day, and note with reference to the presence or absence of the tumor.

September 11th.—Dr. Finney reports that last night on examining the abdomen no trace of the tumor could be felt.

She was ordered a bandage with a carefully adapted pad, and asked to estimate the amount of urine, which she only did, however, for about a week. On the 11th the amount of urine was five pints and a fifth; on the 12th, three pints and a half; on the 13th, four pints and a half; on the 14th, four pints and a half; on the 15th, three pints and a half; on the 16th, two pints and a half. From 6 A. M. to 6 P. M. on the 16th she felt tired and weak, and had uncomfortable sensations, and she passed at this time not quite a pint. At 11 P. M. on the 16th the tumor mass was quite evident, projecting prominently between the ribs and the hip. It was evident throughout the 17th, but she felt very much better toward the afternoon, but was inclined to cry and fret, and was a good deal distressed at the recurrence of the mass. On the 18th it had disappeared entirely. The sample of urine examined was clear, specific gravity 1.015, and contained neither albumin nor tube casts.

Additional Note. I saw this patient last on January 8th. She had been very nervous and uneasy about herself. The tumor was present, though not so large as when first seen. Its appearance and disappearance have been repeatedly verified by Dr. Finney.

CASE LXII. *Atypical Renal Colic; Tumor in the Left Renal Region which Appears and Disappears.*—Mrs. A., aged twenty-seven years, 1 year, had consulted me on two or three occasions for dyspepsia. On October 2d she came complaining of a lump in the left side, which had been present on and off all the summer, and which sometimes gave her a great deal of pain. She first noticed it in May, following an attack of colic of great intensity. A few days subsequent to her return that there was a

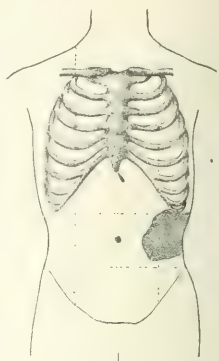


FIG. 39.—Illustrating the position of the tumor in Case LXI.

in contrast to atropine, be readily borne where there is a pathological increase of the same.

"Scopolamine hydrobromate is used in one fifth and one tenth per cent. solutions, which are said to correspond with one half and one per cent. atropine solutions."

In February last Dr. D. B. St. John Roosa introduced the use of scopolamine into the Manhattan Eye and Ear Hospital in the treatment of his clinic and indoor patients, and since that time it has had a fairly general trial throughout the hospital, and its value has been pretty accurately determined in pathological and ametropic conditions, particularly the latter. Careful observations have been made in about twenty-five refraction cases, with the view of ascertaining the rapidity and thoroughness with which the accommodation can be paralyzed and the pupil dilated by scopolamine, the best method of using the drug, and the minimum strength of solution which will produce satisfactory results, physiological and toxic effects, and the duration of mydriasis and cycloplegia.

In pathological cases reliable conclusions as to the beneficial or deleterious effects of scopolamine have been difficult to arrive at, owing to the fact that it is no easy matter to decide whether an abatement or an increase in the severity of an ocular disease (where only a limited number of cases can be utilized for experimentation) is due to the use of a certain drug.

The strength of the solutions employed in both pathological and refraction cases was usually one fifth or less frequently one tenth per cent., one or two drops being instilled into each eye until four or five instillations had been made. Maximum dilatation of the pupils was produced in all refraction cases in from ten to twenty-five minutes.

The amplitude of accommodation, as indicated by the number and distance at which Jaeger test type could be read by the patient, showed a decrease directly proportionate to the rapidity with which the pupil dilated; at the end of twenty or thirty minutes such spherical glasses were placed before the patient's eyes as would bring the near point to about twelve inches, and in nearly all the cases examined, where the perceptive functions of the eye were not at fault, the distance on each side of the point of focus at which Jaeger No. 1 could be read was from one to two inches in other words, about the same range that we have found to be present in aphakia, and in several cases less fully accommodated. In the majority of patients the effect of accommodation on the heart was not observed within from five to ten minutes by a graphic dynamometer on the part of the pulse, which was observed at three-minute intervals up to thirty or forty minutes, and was either not noticed by the patient or not noticed and comparatively. In a few cases the pulse (rate and force) was observed at five-minute intervals. The dynamometer was not recorded every five minutes during the first ten minutes, the amount depending upon the variety of ametropia, the strength of the action and the frequency with which it was found to be so perceptible that it was necessary to wait fifteen minutes after the first or second instillation, according to the point or points upon the visual field to be present

the solution from running into the nose; later on these precautions were taken, thus accounting for the infrequency of poisonous symptoms in the last fifteen cases. These symptoms resemble very closely those produced by atropine, dryness of the throat being usually the first indication of toxic effect; this came on in from fifteen minutes to an hour and lasted from four to thirty-six hours. Following this was observed marked muscular weakness, with unsteady, staggering gait and great dizziness; these symptoms manifested themselves within an hour, the duration being from twelve to twenty-four hours. Loss of appetite, with considerable nausea, lasting a day, was observed in two cases. Some patients became very restless, and others, the majority, exhibited the opposite condition; in three cases great drowsiness came on within an hour; in one case the primary effect of the drug was exhilaration, followed in an hour by depression, the patient becoming very sleepy and heavy. The taste of the drug was often complained of and was described as being "nasty and bitter." Flushing of the face was observed only twice.

In cases of iritis, kerato-iritis, hypopyon, episcleritis, etc., where scopolamine was used, its effects were very satisfactory, but it seemed to possess no advantage over atropine. In a patient who had always been very susceptible to the influence of atropine the instillation of one drop of the one fifth per cent. solution of scopolamine hydrobromate was sufficient to produce considerable flushing of the face. We have been unable to make any observation which would support the claims made by Rahlmann that scopolamine will not increase tension. For purposes of examination or operation the drug has been found specially useful, owing to the rapidity of mydriatic action, one or two drops of the one fifth or one tenth per cent. solution being sufficient to fully dilate the pupil in from ten to twenty-five minutes. The average duration of cycloplegic and mydriatic effect we have found to be from five to eight days. Comparatively few tests with the weaker solutions have been made, but the results so far obtained from the use of a one tenth per cent. solution have been satisfactory. In the case of a little girl with spasm of accommodation, seven instillations in sixty hours completely paralyzed the ciliary muscle, the effect lasting for six days.

In all the refraction cases examined the results have been practically the same, so far as rapidity and thoroughness of action and duration of effect are concerned. A detailed account of two or three cases will therefore be sufficient to indicate the advantages or disadvantages which, in our experience, the drug possesses.

CASE I. Mrs. G., aged thirty-five years, examined February 25, 1894. Complaint of inability to do near work for any length of time, has headache more or less constantly, and eyes have of late felt sore and tired. No external ocular disease.

V. O. D. $\frac{1}{2}$ 20 W. 4.10 D. S. $\frac{1}{2}$ 10 cyl. ax. 90°.

V. O. S. $\frac{1}{2}$ 20 W. 4.10 D. S. $\frac{1}{2}$ 10 cyl. ax. 90°.

Jaeger, O. D. 15 D. ax. 90° 150 W. R. O. S. 1 D. ax. 90° 150 W. R.

Instil. No. 2 at 10 minutes.

Ophthalmoscope O. D. $\frac{1}{2}$ 20 W. 4.10 D. S. $\frac{1}{2}$ 10 cyl. ax. 90°.

Fundi normal, retracting media clear, some spasm of ciliary muscle. Patient was tested three weeks ago under atropine, result being—

V., O. D. $\frac{2}{3}$; $\frac{1}{2}$ w. +5 D. S. \ominus +1.5 D. cyl. ax. 90°.

V., O. S. $\frac{2}{3}$; $\frac{1}{2}$ w. +3.5 D. S. \ominus +0.75 D. cyl. ax. 90°.

Sol. scopolamine hydrobromate one fifth per cent. instilled, detailed in the following table.

Patient complains of a little dizziness w. +5 D., reads Jaeger No. 2 at eleven to fourteen inches.

Time.	Instillation.	Pupils.
0 min.	Gtt. ij in each eye.	O. D. 4.0 mm., O. S. 4.0 mm.
5 "	" "	O. D. 4.0 mm., O. S. 4.0 mm.
10 "	" "	O. D. 5.5 mm., O. S. 6.5 mm.
15 "	" "	O. D. 6.5 mm., O. S. 7.0 mm.
20 "	" "	O. D. 7.5 mm., O. S. 7.5 mm.

25 min.—Ophthalmoscope +4 D., each spasmodic action of ciliary muscle has ceased.

Retinoscopy, O. D. $\frac{+4}{+5}$. O. S. $\frac{+3.5}{+4}$.

30 min.—V., O. D. $\frac{2}{3}$; $\frac{1}{2}$ w. +3.5 D. S. \ominus +1 D. cyl. ax. 90°.

V., O. S. $\frac{2}{3}$; $\frac{1}{2}$ w. +3.5 D. S. \ominus +0.75 D. cyl. ax. 90°.

Reads Jaeger No. 1 from nine to eleven inches w. +4 D. added to above correction in each eye.

35 min.—Patient complains of great dizziness, muscular weakness, dryness of the throat, and headache; is unable to walk straight, and appears to be very restless.

February 21st.—Patient returned to hospital to-day stating that above-mentioned symptoms lasted for twelve hours, and that, in addition, she had experienced considerable nausea and impairment of appetite.

22d.—With same correction as on February 20th, range for Jaeger No. 1 is nine to eleven inches; pupils widely dilated. Toxic symptoms have subsided and patient feels perfectly well.

24th.—Pupils four millimetres each.

O. D. w. +3 D. S. \ominus +1 D. cyl. ax. 90°.

O. S. w. +3.5 D. S. \ominus +0.50 D. cyl. ax. 90°.

Patient reads Jaeger No. 1 at ten inches without correction. Distant V., O. D. = $\frac{2}{3}$. O. S. $\frac{2}{3}$; with correction = $\frac{2}{3}$ both.

When last seen patient was wearing the above correction constantly, and she states that the glasses have completely relieved her action-point symptoms.

This case demonstrates how readily toxic effects can be produced, and would disprove the statements made by the advocates of the use of scopolamine that it does not cause nervous restlessness, dryness of the throat, or disturbance of appetite.

CASE II.—John M., aged ten years, has ten degrees of albinism consequent to fracture of two years duration.

V., O. D. $\frac{1}{2}$; $\frac{1}{2}$ w. +2 D. S. \ominus +0.50 D. cyl. ax. 90°.

V., O. S. $\frac{1}{2}$; $\frac{1}{2}$ w. +2.5 D. S. \ominus +0.50 D. cyl. ax. 90°.

Jaeger No. 1 at 14 to 16 inches.

Instal. O. D. and O. S. $\frac{1}{2}$ D. ax. 90° 18. W. R.

Ophthalmoscope, O. D. +4 D., O. S. +3 D. Muscular action of ciliary muscle renders ophthalmoscope estimation of refractive inaccurate.

Time.	Instillation.	Pupils.
0 min.	Gtt. ij in each eye.	O. D. 4.5 mm., O. S. 4.5 mm.
5 "	" "	O. D. 5.5 mm., O. S. 5.5 mm.
10 "	" "	O. D. 6.5 mm., O. S. 6.5 mm.
15 "	" "	O. D. 6.5 mm., O. S. 6.5 mm.
20 "	" "	O. D. 7.0 mm., O. S. 7.0 mm.

Scopolamine used as in former case, with the difference that the nasal ducts were compressed during and for a few minutes after each instillation of the drug.

With +10 D. before each eye Jaeger No. 1 is read from six and a half to eight inches.

Ophthalmoscope, +8 D. each. No blurring.

Retinoscopy, O. D. and O. S. $\frac{+7}{+7}$.

Time.	Instillation.	Pupils.	Accommodation.	Vision.
0 min.	Gtt. ij in each eye.	O. D. 4.0 mm., O. S. 4.0 mm.	Jaeger No. 2 at 6 inches.	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
5 "	" "	O. D. 4.0 mm., O. S. 4.0 mm.	" " 4 at 8 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
10 "	" "	O. D. 5.5 mm., O. S. 6.5 mm.	" " 10 at 12 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
15 "	" "	O. D. 6.5 mm., O. S. 7.0 mm.	" " 13 at 12 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
20 "	" "	O. D. 7.5 mm., O. S. 7.5 mm.	" " 14 at 20 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$

V., O. D. $\frac{2}{3}$; $\frac{1}{2}$ w. +7 D. S.

V., O. S. $\frac{2}{3}$; $\frac{1}{2}$ w. +7 D. S.

Accepts no cylinder. Visual axes parallel. No toxic symptoms induced. The subsequent behavior of the ciliary muscle and iris was not determined, as patient could not return for examination.

This case illustrates the rapidity and thoroughness with which paralysis of the accommodation can be produced by scopolamine, and shows that the danger of toxic effect is reduced to a minimum by taking the precautions mentioned above.

CASE III shows in a typical manner the effect of the drug upon the pulse, which before the first instillation was 92; five minutes after the first instillation was 87; five minutes after the second, 80; five minutes after the third, 73; five minutes after the fourth, 69.

The pulse was regular throughout, but became soft and compressible within ten minutes after the drug had been used.

Had it been possible to compare the action of other mydriatics on patients upon whom the scopolamine had been tried, the deductions might have been more absolutely reliable; still, I think the observations so far made justify us in coming to the following conclusions:

1. That the toxic effect of scopolamine used in one tenth and one fifth per cent. solutions are easily produced, but can readily be avoided if the lids be everted or the nasal ducts compressed at the time of instillation.

2. That in diseased conditions of the eye scopolamine is quite as useful a drug as atropine.

3. That in refraction work complete and thorough paralysis of accommodation with the maximum of mydriasis can be produced in from twenty minutes to half an hour, when the drug is used as previously mentioned, and that the duration of its effect is from five to eight days.

4. That its greatest value lies in the rapidity of its action, which renders it specially useful for purposes of examination in refractive cases and in diseased conditions of the interior of the eye.

Time.	Instillation.	Pupils.	Accommodation.	Vision.
0 min.	Gtt. ij in each eye.	O. D. 4.5 mm., O. S. 4.5 mm.	Jaeger No. 1 at 6 inches to 10 inches.	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
5 "	" "	O. D. 5.5 mm., O. S. 5.5 mm.	" " 8 at 8 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
10 "	" "	O. D. 6.5 mm., O. S. 6.5 mm.	" " 10 at 12 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
15 "	" "	O. D. 6.5 mm., O. S. 6.5 mm.	" " 12 at 12 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$
20 "	" "	O. D. 7.0 mm., O. S. 7.0 mm.	" " 14 at 20 "	O. D. $\frac{2}{3}$, O. S. $\frac{2}{3}$

THE TREATMENT OF DELIRIUM TREMENS DURING AN ALCOHOLIC SERVICE IN BELLEVUE HOSPITAL.

By RUSSELL BELLAMY, M. D.,

CORPORAL SPRINGS, N. Y.

ON the 15th of last August, in the routine of service, the alcoholic wards of Bellevue Hospital came under my care. During my service nearly five hundred patients were admitted. In this service the highest mortality has always been in those cases suffering with the acute form of delirium tremens, experience having shown that if the delirium continues for any length of time, the patient usually dies; serous effusion occurring on the surface of the brain, as is shown by autopsy. Believing that the best results would be obtained if the delirium could be quickly controlled and natural sleep induced, an extreme hypnotic and feeding plan was adopted, rather than the popular feeding, profound hypnotic, or the alcoholic stimulant.

Having determined to use hypnotics, and while experiencing some difficulty in deciding between the dangerous Magendie solution, the rapid but uncertain hyosine hydrobromate, the powerful depressant chloral, and the almost inert bromides or their combinations, my attention was called to a new hypnotic—trional, or diethylsulphonmethylethylmethane.

Trional, which has been used extensively in Germany, is described by the chemists of that country as a white powder consisting of shining tablets having a slightly bitter taste, of a melting point of 78° C., which dissolves in three hundred and twenty parts of water at ordinary temperatures.

In looking up the literature of this new phenol derivative it was found that it had been very effective in neurasthenic insomnia, the insomnia of mental disease, and in hysteria, but no record of its use in delirium tremens appears. Reasoning from analogy, I determined to use it in my treatment of this disease, and through the kindness of one of the largest importers was enabled to experiment in twenty-nine cases of marked alcoholic excitement, the patients being so acutely delirious that forcible restraint was necessary.

Mode of Treatment.—Immediately on the admission of a patient to a ward, ten to twenty grains of trional mixed in water, with ten minims of tincture of capsicum to hasten absorption, were administered, and, if the condition would warrant, a very hot bath was given, its temperature later gradually lowered. The patient was then placed in bed in a well-regulated room and attended with absolute silence. If the condition seemed to require it, treatment in thirty minutes, ten grains of trional were given. If needed, a third or fourth dose, twenty grains were administered. The patient was treated in the most quietest place, the food being withheld for fifty to sixty hours, the pulse and respiration were depressed. The treatment by trional averaged fifteen to thirty grains within three days. In a majority of the patients the treatment was successful.

In several more instances of the trional and capsicum treatment the patients recovered quickly in the first twenty-four hours. In some cases the treatment was continued for a period of three to five days.

cases, no medication was given except a routine tonic consisting of strychnine with a mixture of the vegetable bitters and ammoniated tincture of valerian. In no case was a marked depressing effect from trional observed. The pulse always remained good, and, except in Case X, where forty minims were administered hypodermically shortly before death, whisky was not used. Possibly on account of the ethylic and methylic elements in its composition, the drug acted as a cardiac stimulant rather than, as was supposed by many, a depressant. As my experience has shown that a moderately high temperature is almost a constant accompaniment of severe delirium tremens, it is important to note that in no case did the temperature rise above 102°, consequently the drug certainly possesses antipyretic properties.

In all cases forced feeding, in small quantities often repeated, was followed, the diet consisting of milk, eggs, and soups.

The following is a report of twenty-five cases where trional was used exclusively. In three more cases, thirty grains of chloral and forty grains of bromide of potassium were administered, as the drug could not be obtained.

CASE I.—P. B., bricklayer. Admitted at 5 p. m., August 15th. Twenty grains of trional given immediately, followed one hour later by ten grains. Immediate effect. Awoke at 10 p. m., when twenty grains were administered. Slept until morning. Shackles removed. Routine tonic treatment.

August 18th.—Discharged cured.

CASE II.—C. C., aged forty-four years, laborer. Complication scalp wound. Admitted August 15th. Delirium tremens developed at 4 p. m. when twenty grains of trional were given, followed by twenty at 5 and twenty at 7 p. m. Sound sleep induced. Pulse and respiration good.

August 16th.—Shackles removed. Routine tonic treatment. **17th.**—Discharged cured.

CASE III.—S. P., aged thirty-eight years, ironworker. Admitted August 21st at 6 p. m., when twenty grains were given, followed by twenty at 9, fifteen at 10, and twenty at 11 p. m. Slept remainder of night.

August 22d.—Ten grains at 9 a. m. Quiet throughout the day. Ten grains at 2 p. m., and again at 4 a. m., with good effect.

23d.—Shackles removed. Routine tonic treatment.

CASE IV.—F. W., aged forty-one years, laborer. Admitted August 21st, midnight. Twenty grains on admission, repeated at 1 and again at 2 a. m. Slept until 7 a. m.

August 22d.—Twenty grains at 1 and 9 p. m. Slept the entire night.

23d.—Shackles removed. Slightly nervous at 2 p. m., when twenty grains were given. Passed a good night.

24th.—Awoke in excellent condition. Routine tonic treatment.

26th.—Discharged cured.

CASE V.—P. J. M., aged thirty-one years, expressman. Admitted August 17th at 4 a. m., when twenty grains were given with good effect. Slept from 6:30 to 2 p. m., when twenty grains were given. Passed a comfortable night.

August 18th.—Shackles removed. Ten grains at 9 a. m., followed by tonic treatment until August 19th. Discharged cured.

CASE VI.—B. B., aged forty-two years, bricklayer. Admitted August 17th, 6 p. m., with delirium of the most aggravated type. Trional, fifty grains, given within two hours

following admission. Sleep induced. Awoke at 1.30 A. M.: restless and excited until 3 A. M. Twenty grains given with immediate effect. Slept quietly until seven.

August 18th.—Markedly improved. Trional, twenty grains. Ten grains, 9 P. M. Unbroken sleep for twelve hours.

19th.—Awoke refreshed. Perfectly rational. Shackles removed.

20th.—Tonic treatment.

21st.—Discharged cured.

CASE VII.—J. D., aged thirty-eight years, junkman. Admitted August 17th at 4.30 P. M. Developed delirium tremens two hours after admission, when trional, twenty grains, were given; repeated at 9 P. M. Quiet. Passed a comfortable night.

August 18th.—Shackles removed. Ten grains at 1 P. M. and again at 9 were administered. Sleep followed.

19th.—Discharged in excellent condition.

CASE VIII.—H. C. S., aged forty-five years, farmer. Admitted August 20th at 1.30 P. M. Twenty grains on admission, followed by ten grains half an hour after, and twenty grains four hours later. Patient quiet. At 7 P. M. twenty grains given with good effect, lasting throughout the night.

August 21st.—Awoke much improved but still very nervous. Twenty grains given at 9 A. M., repeated at 10 A. M. with fairly

CASE IX.—F. R., aged thirty-two years. Canvasser. Admitted, August 23d, 10.45 A. M. Twenty grains of trional were given, followed by ten grains at 12; four hours later, twenty grains. Sixty grains given during the night.

August 24th.—Shackles removed this A. M. Ten grains at nine and 1 P. M. Excellent effect.

25th.—Discharged.

CASE X.—F. T., aged forty years. Drug clerk. Admitted September 7th at 8.45 P. M. Was violently delirious when admitted; pulse feeble and irregular. Twenty grains of trional were given immediately without effect, and doses were given at intervals throughout the night aggregating at 7.30 A. M. a hundred and twenty grains. The pulse had become bad at 1 A. M. and large doses of strychnine were given. It was not much better at four o'clock, when one drachm of aromatic spirits of ammonia was administered.

September 8th.—At 7.30 A. M. the pulse was found improved and the patient had grown somewhat quieter. Thirty grains of trional were given by the rectum, and at 1 and 3 P. M. ten grains by the mouth. At 7.30 P. M. the condition changed unfavorably and the patient began to sink rapidly. He was given forty minims of whisky hypodermically; glonoin, one fifth of a grain; fluid extract of digitalis, two minims. He died at 8.30 P. M.

Case.	Name.	Age.	Occupation.	Admitted.	Quantities trional administered.	Trional discontinued.	Remarks.
11	J. C.	36	Pressman.	Aug. 15, 7 P. M.	Gr. 185.	Aug. 16, 5 P. M.	Discharged Aug. 17. Gr. 165 given on the 16th.
12	T. R.	35	Painter.	Aug. 31, 1.15 P. M.	Gr. 110.	Aug. 22, 9 P. M.	Sedative effect observed after first dose of gr. 29. Asleep at 9 P. M. after gr. 70. Discharged Aug. 25.
13	T. B.	32	Steam fitter.	Aug. 25, 11 P. M.	Gr. 100.	Aug. 25, 1 P. M.	Gr. 50 induced sleep. Discharged Aug. 26.
14	J. D.	35	Machinist.	Aug. 29, 1.45 P. M.	Gr. 100.	Aug. 22, 9 P. M.	Sleep followed gr. 70 administered. Discharged Aug. 25.
15	W. H.	56	Cook.	Aug. 15, 10.35 A. M.	Gr. 120.	Aug. 16, 9 P. M.	
16	H. M. C.	54	Mercantile.	Sept. 6, 4 P. M.	Gr. 160.	Sept. 9, 4 A. M.	Gr. 70 given during first five hours. Discharged Sept. 11.
17	L. M.	30	Peddler.	Sept. 6, 7 P. M.	Gr. 110.	Sept. 10, 9 P. M.	No delirium. Cured Sept. 10. Treated subsequently for tuberculosis.
18	D. H.	35	Laborer.	Sept. 7, 1.10 A. M.	Gr. 180.	Sept. 9, 1 P. M.	Discharged Sept. 10. Gr. 80 during first six hours.
19	W. R.	36	.....	Sept. 7, 1 A. M.	Gr. 70.	Sept. 8, 9 P. M.	Discharged Sept. 9. Responded to first dose of gr. 20.
20	J. R.	40	Hatter.	Sept. 9, 11.40 P. M.	Gr. 60.	Sept. 10, 5 P. M.	Discharged Sept. 12.
21	J. H.	33	Orderly.	Sept. 9, 2 P. M.	Gr. 50.	Sept. 15, 9 P. M.	Discharged Sept. 12. Responded to first dose of gr. 20.
22	W. K.	35	Shoemaker.	Sept. 15, 1 P. M.	Gr. 70.	Sept. 16, 9 P. M.	Gr. 60 first ten hours. Slept between doses.
23	W. F.	37	Furniture.	Sept. 15, 9.50 A. M.	Gr. 90.	Sept. 16, 1 A. M.	Discharged Sept. 19.
24	E. D.	28	Stableman.	Sept. 18, 9 P. M.	Gr. 70.	Aug. 19, 11 A. M.	Deep sleep resulted after administration of first gr. 50.
25	F. R.	32	Canvasser.	Aug. 23, 10 A. M.	Gr. 120.	Aug. 25, 1 A. M.	Gr. 100 during first twenty-four hours. Discharged Aug. 26.
26	J. H.	31	Hacker.	Sept. 11, 11.45 A. M.	Gr. 80.	Sept. 15, 9 P. M.	Onset of trional given gr. 100, group of substances. Trional given gr. 100. Sept. 16, 10.30 P. M. Trional Sept. 16.
27	W. A.	38	Laborer.	Sept. 9, 1.15 P. M.	Gr. 100.	Sept. 11, 9 P. M.	Responded to trional given gr. 100. Trional given gr. 100. Sept. 11, 10.30 P. M. Trional Sept. 11.
28	H. C.	44	Mercantile.	Sept. 10, 9 P. M.	Gr. 70.	Sept. 12, 4 P. M.	Sleep followed gr. 20 given during first ten hours. Trional given gr. 100. Trional given gr. 100. Sept. 12, 10.30 P. M. Trional Sept. 12.
29	L. M.	31	Laborer.	Sept. 11, 2 A. M.	Gr. 80.	Sept. 11, 9 P. M.	Responded to trional given gr. 100. Trional given gr. 100. Sept. 11, 10.30 P. M. Trional Sept. 11.

good effect. Twenty grains at 9 A. M. induced sleep until 10 A. M. Pulse irregular and intermittent.

2 A. M. Awoke with pulse and respiration more regular. Shackles removed. At 9 A. M. ten grains induced good sleep's sleep.

3 A. M. Awoke. Tonic treatment continued until 10 A. M. Discharged on latter date cured.

The drug was used in several other cases of delirium tremens with excellent results. I repeat that a record of these cases was not kept. They were sent to consultation with Dr. J. F. Hastings, Surgeon, Third Surgical Division, and Dr. Frank Cassidy, Third Surgical Division.

Summary.—1. Delirium was controlled with greater rapidity and safety by trional than by other hypnotics.

2. In the majority of cases a marked stimulant effect was observed, possibly on account of the methylic and ethylic elements which enter into the composition of the drug.

3. On account of the low temperature noted in all cases, trional must possess antipyretic properties, thereby simulating its allies of the phenol group.

4. It was always well borne by the stomach, and in one case was rapidly absorbed when administered *per rectum*.

5. No unpleasant after-effects were observed, and in all cases, barring Case X and a tuberculosis complication, recovery was speedy.

THE VALUE OF AN ETHEREAL SOLUTION OF IODOFORM IN THE TREATMENT OF HÆMORRHOIDS.

By CARL BECK, M.D.

AFTER considering the great absorbent power which iodoform dissolved in ether exerts in such conditions as cysts, lymphomata, goitre, etc. (hydrocele also, in which I have recently employed it successfully), where a shrinking process of the tissues is intended, I was induced to try its effect in the treatment of hæmorrhoids, and the good results which I have obtained in eight cases encouraged me to recommend this remedy to the profession, although I am well aware that the small number of cases, as well as the short time which has elapsed since the operations were performed, may impair, to some extent, my colleagues' confidence in the new method.

The operation is done in the following manner: After having prepared the patient by cleansing the bowels thoroughly with repeated irrigations of a solution of salicylic acid about fifteen minutes before the operation, a suppository containing two grains of cocaine and from a quarter to a third of a grain of morphine is introduced into the rectum. If the patient is extremely sensitive at the beginning of the operation, a one-per-cent. solution of cocaine should be injected into different portions of the mucous membrane, but practically I have never found this to be necessary. I must preclude the patient to hæmorrhage.

After the insertion of an iodoform gauze tampon into the rectum, the tumour is brought into view without grasping them with a forceps. Two drops of a saturated solution of iodoform in ether are then injected into the tumour tissue, following each node. Injecting the tumour with ether, the latter causes a formation of new tissue and a shrinking of the tumour tissue. If the hæmorrhoidal suppository had been introduced at the proper time, it had killed the tumour very early and permanently without success. In place of the cocaine suppository, sometimes the growth of vessels with its own inflammation and fibrous and epineuric cover to prevent hæmorrhage of the tumour.

On the third day two drops of ether oil are injected into the rectum, and another is given *per os*. During the

subsequent weeks great care should be taken to keep the bowels loose. This operation does not prevent the patient from attending to his daily work.

I have not observed any bad effects, such as sepsis, abscess, ulceration, embolus, hæmorrhage, and stricture or fistula, and no relapse has yet occurred in any of my cases. If no obliteration, but contraction, should take place in a large hæmorrhoid, I would repeat the operation.

The following advantages are to be derived from the injection of iodoform dissolved in ether: 1. The operation can be performed without assistance, thus materially lessening the expense, which to many patients is an important item. 2. Iodoform, being a strong antiseptic, is certainly fitted to prevent suppuration or possibly sepsis, and differs considerably from the much-used carbolic acid, which, if employed in the requisite strength, acts as a caustic. 3. As the nodules themselves are not touched, but only the circumvenous tissue, it is evident that embolism, which follows the use of carbolic acid and other liquids, can not occur. (Death due to the injection of carbolic acid is by no means a rare occurrence. In a case of my own, after I had injected a ten-per-cent. solution of carbolic acid into three small nodules in a young woman, a temperature of 106° F. set in ten hours afterward. On the following day icterus developed, but fortunately disappeared two weeks later, leaving the patient in a very weak condition for several months.) 4. No contraction takes place, such as follows the use of the cautery. 5. The patient can resume his work at once.

Seven months ago I used this treatment in the first case, five months ago in two cases, and four months ago in another case, and in all the hæmorrhoids have disappeared. The four remaining patients, who are doing well, were treated between one and three months ago.

I have had no opportunity of employing this method in treating so-called thrombotic and capillary hæmorrhoids, but I do not see why they should not yield to it.

In one of the cases mentioned the patient had prolapsed and large tumors, and I used this injection with good results, although the sphincters were contracted. If I had failed, Whitehead's operation would then have been performed. Among the other cases two of the patients had internal and five external hæmorrhoids, and, although in two cases there was inflammation, the injections were well borne and successful.

From a strictly surgical point of view, Whitehead's operation is the ideal one. But it should not be forgotten that it can be done only when good and sufficient assistance is obtainable; furthermore, it confines the patient to his bed for at least two weeks. What this means to a poor workingman every physician knows, and in New York city, where, on an average, every fourth adult suffers from hæmorrhoids, such points have to be taken into consideration.

In reference to their frequent occurrence, I may say that it was quite customary in Germany to call hæmorrhoids "the American disease" before America had enlightened the Old World about appendicitis, which is now honored with this term. There is some truth in this, for the busy and enterprising American citizen, in his haste to become

rich, does not seem to pay sufficient attention to the ordinary laws of health.

Since this case was written I have operated in four other cases with the same good results. I have also tried the same injection in the circumvenous tissue in two cases of varix. One was that of a woman, fifty-seven years old, who had suffered from varicose veins of the legs for twenty-seven years. Perfect recovery took place when I had injected at eight different points. In a case of varicocele in which I tried the injection in the same manner the result is still imperfect, probably because I used too small a quantity of the solution. It gives me pleasure to state that Dr. Struble, of Middletown, N. Y., has written to me that, having witnessed my demonstrations of this treatment at the Post-graduate Hospital, he has employed these injections in two cases of hæmorrhoids with perfect satisfaction.

37 EAST THIRTY-FIRST STREET.

SUPPURATIVE DISEASE OF THE ACCESSORY SINUSES OF THE NOSE.*

By HERBERT MAXON KING, M. D.,

HEAD SURGEON, NEW YORK POST-GRADUATE MEDICAL SCHOOL,
FORMERLY INSTRUCTOR IN DISEASES OF THE THROAT AND NOSE IN
THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

A CHRONIC, purulent discharge from the nares, associated with little or no factor perceptible to the attendant, with a history of nasal polypi, an acute "head cold," hypertrophic nasal catarrh, or perhaps of alveolar abscess, at a period more or less remote, has, comparatively speaking, only recently and with the development of the study of rhinology been of any special significance to the surgeon.

With the evolution of the specialist, however, classification of diseases of the special organs on more scientific bases was soon followed by a clearer comprehension of the nature of a morbid condition of which such a discharge is the evidence, and in many instances the only evidence, at the command of the physician.

Treatises on general surgery, as found in many of our libraries, contain very little that is of practical value upon the subject, and even those more recent and exhaustive works upon rhinology and laryngology which have appeared within the last decade give comparatively little space to the discussion of the aetiology, pathology, and treatment of a morbid condition the importance, the consequences, and the extreme obduracy in resisting cure of which can only be estimated by those who, like myself, have often seen their best efforts vainly directed, and that with perfect cognizance of the existing condition, toward their relief.

That suppuration of these sinuses is not an infrequent complication has resulted as well from the question I have myself seen as from the reports of others, and yet I am convinced that it is less often recognized and correctly differentiated than almost any other diseases of the head tract.

Garretson's *System of Oral Surgery* draws the distinction

that "diseases of the antrum are for the most part simple in character, easy of diagnosis, and, as a rule, not at all difficult of treatment." This conclusion is very misleading, and I think will be borne out only by the experience of the oral surgeon and not by that of the rhinologist, for reasons at once patent—the former, as a rule, coming in contact with those cases arising from caries of the teeth alone, and that during or very early subsequent to the acute stage, while the latter has to deal with those arising primarily in the cavity or from a diseased condition in the nares as well, and, as a rule, is consulted only after chronicity is well established, the history often indefinite and merging into that of polypus or hypertrophic catarrh, and without those perfectly clear, aetiological landmarks which present to the former. Now, if this be true of the antrum, the largest and most commonly affected of all the accessory cavities, it applies with much greater force to that condition affecting the frontal and sphenoidal sinuses and the ethmoidal cells. When these cavities are affected it is by no means an easy matter to correctly diagnosticate the case, and still less so to successfully treat it.

In the first place, this condition of empyema, simulating as it does in its morbid products an abscess, is in every other respect analogous to a "gleet"—an idea suggested by Mr. Bell and quoted by Dr. Garretson, who says in making the comparison: "Both diseases consist equally of an altered secretion, in one case of the pituitary membrane, and in the other of the muscular lining of the urethra, which in neither instance possesses any of the characteristics of abscess, though the matter in both is purulent."

In this respect does empyema of these sinuses differ from suppurative disease of the mastoid cells. In the former it is the normal secretion which is altered, a mere perversion of function, and that often before any structural lesion can be determined to exist.

I do not mean that exfoliation, ulceration, caries, and necrosis may not occur in the course of a long-standing empyema in these cavities, for it often, I might almost say invariably, does occur unless relief is effected; but it is the effect and not the cause of the continued suppuration, as is the case in mastoid complications of middle-ear difficulty.

Reviewing what has been written upon the aetiology, we find a somewhat startling discrepancy of opinion even among contemporaries with equal opportunities for observation. All agree, however, that the disease in question is almost without exception secondary to one or more of three conditions—viz. (1) Disease of the teeth, (2) morbid structural changes of the nasal mucous membrane, (3) a constitutional weakness which is inclined to suppuration without sufficient cause, but especially those of the upper air-passages. Cases arising from the last cause form but a small proportion of those in which we understand observation to be failing, and which unfortunately when considered in the light of the more grave and serious suppurative condition of these sinuses that first will not be considered in this section. We are thus reduced to the two causes of secondary disease, and still find which of these is the most frequent? Scarcely to be known.

* Read before the Society for Improving the Management of the Head and Neck, May 4, 1894.

sible to decide, where reference is had to the antrum, when observers of such unquestionable experience and integrity as Bosworth, Fraenkel, Zuckerkandl, and Christopher Heath disagree, Bosworth and Zuckerkandl finding nasal lesions most often the cause, while Fraenkel and Christopher Heath are able to attribute the greater number to dental caries. In an analysis of thirty-one cases, Kuchenbecker found thirty-three per cent. to be due to dental caries, twenty-two per cent. to general diseases, ten per cent. to tumors, twenty-two per cent. to unknown causes, while but thirteen per cent. could be attributed to causes arising within the nose. (Burnett, *System of Diseases of the Ear, Nose, and Throat*.)

The proportion here attributed to general diseases seems to me extraordinarily large, likewise the number for which no cause could be found; but that it is often impossible to determine which of two existing lesions—dental caries or hypertrophied and degenerated turbinated tissues—is the primary cause of pus secretion in the antrum, I am very well aware.

That empyema of the antrum may supervene upon a catarrhal inflammation in the nares without other factors in its causation is no doubt possible under two conditions—i. e., (1) there must be an extension or a coexistence of the catarrhal inflammation in the lining membrane of the antrum, exciting secretion in excess of what can be absorbed by the lymphatics, and (2) there must be an occlusion of the ostium maxillare of sufficient duration for the accumulation and decomposition of the secretion, which may then, by the irritation of its presence, excite a further discharge which finally becomes purulent. The natural opening of this sinus into the meatus is so situated as to be protected from occlusion by any save the most aggravated cases of hypertrophic rhinitis, which fact may explain the infrequency of antral complications in our recent epidemics of influenza, where undoubtedly the lining membrane of the accessory sinuses was often affected simultaneously with that of the nasal chambers by the common infecting agent.

In the case of polypus and polyoid hypertrophy, on the other hand, the respective openings of these cavities may become occluded; in fact, rarely is it otherwise in neglected cases. But unless the growth projects into the cavity, and by irritation of its presence causes supersecretion, which degenerates into a purulent discharge, the function of the lymphatics prevents empyema.

My own experience, together with what I have been able to learn from reports extant upon the subject, convinces me that suppurative disease of the antrum is of very much less frequent occurrence than that of all the other accessory cavities put together, but I cannot tell why the former should be more often affected by disease arising within the nose than do all the other sinuses, or whether this is due to the fact that the antrum is the most accessible sinus to the inflammation of these parts, supported by its proximity to these cavities, or whether it is due to the fact that the inflammation of the teeth and surrounding structures is most apt for the most frequent means of suppuration of the antrum, while the other sin-

uses in the majority of instances may be attributed a like condition occurring in the other accessory cavities.

The importance of early recognizing the exciting cause of the disease in question can not be overestimated by one who expects success to attend his efforts toward a cure. The diagnosis of empyema of the accessory sinuses when but one cavity or but one side is affected and in typical cases seen early is not difficult; but typical cases are not the rule, and it is seldom that the advice of the surgeon is sought before chronicity has complicated the primary lesion with its confusing sequelæ, and then it is that diagnosis will often of necessity sink to the level of mere conjecture.

The Voltolini method of transillumination by means of a small incandescent lamp promised much toward making diagnosis in these cases easy, but I must confess that I have not found it a very reliable test, except in demonstrating the presence of pus in the frontal sinuses. Where the ethmoidal cells and maxillary sinuses are suspected it has been of little value in my hands, and, to be brief, a chronic purulent discharge from the nares, more or less profuse, especially if it be unilateral and we can eliminate syphilis, foreign body, neoplasm, and simple purulent rhinitis, rarely if ever seen in adult life, is a sufficiently suspicious sign to warrant us in taking the only step which will make the diagnosis absolutely correct—namely, abstracting pus from the suspected cavity. This may be effected by means of small aspirators constructed of proper shape and strength in the case of any of the cavities in question except the frontal sinuses, without excessive pain and with little or no danger of untoward results if the suspected cavity should prove healthy. In the instance of the frontal sinus being suspected, provided I could not otherwise differentiate, I should not hesitate to make an incision through the skin and enter the sinus with a small Curtiss trephine or drill, as in the case reported below, convinced as I am that if the frontal sinus is affected this procedure results in most rapid cure, with the least inconvenience to the patient, while if it should by any chance not be diseased the wound heals with an almost imperceptible scar. It is hardly necessary to say that where suspicion falls upon the antrum and a carious tooth exists upon the affected side, removal of the diseased tooth, especially should it chance to be a first molar or second bicuspid, is the indication, when, if this alone does not affect an entrance, it is a very easy matter to do so through the alveolus; should the teeth be perfectly sound, however, I should aspirate through the thin lateral wall of the nose as low down as the floor of the inferior meatus with a strong curved trocar.

Upon the establishment of the diagnosis, relative to the etiology in these cases, will depend, to a certain extent, the prognosis, although it has been my misfortune to see a number of cases continue indefinitely and with only slight improvement after every vestige of the primary cause was removed, as in the third case reported below.

On one point with reference to prognosis I think all observers agree, i. e., spontaneous resolution never occurs in these cases when the cause is attributable either to lesions within the nasal chambers or to those connected with the teeth.

serted, through which the patient was directed to inject a solution of peroxide of hydrogen once or twice daily. A year later, while in Philadelphia, he was advised to discontinue the peroxide of hydrogen and substitute a carbolyzed solution. This treatment had been continued, with some variation, from time to time up to the date of my first attending him.

I found a discharge from the left naris of landable pus sufficient to soil three or four handkerchiefs daily. The ostium maxillare was perfectly patent, and the condition of the turbinate tissues was normal. There existed an antral fistula through the alveolus, so small as to admit only the smallest probe, but no pus was discharged by it. I enlarged the opening in the alveolus by means of a drill, evacuating a large quantity of pus, and, after thoroughly cleansing the antrum, examined the interior with a probe. I found it partly divided into two chambers by a thin septum of bone, which I broke down with an abscess curette. The treatment then consisted in frequent douchings with solutions of boric acid (saturated), carbolic acid (two per cent.), and bichloride of mercury (not stronger than 1 to 10,000), which was continued, more or less regularly, for a year, with but one advantage gained—viz., the discharge from the nose entirely ceased, and that through the fistula was reduced in quantity. Early this year an examination with a probe detected what seemed to me to be a disease at the root of the wisdom tooth, the only remaining molar on that side of the arch. Upon extraction an abscess sac was found upon the root, which had extended into the antrum; removal of the tooth effected another opening through the floor of the antrum, and with the free drainage thus established I hope for early recovery. For nearly a month I treated the case much as before, reducing the discharge considerably, but not entirely.

I might add that at this time I resorted, without appreciable results, to the use of tincture of iodine, at first half diluted and afterward full strength; also to solution of silver nitrate, fifteen grains to the ounce, and tincture of chloride of iron, diluted one half. I then tried the so-called "dry treatment," which consisted in thorough cleansing with a syringe and Eustachian catheter adapted to fit the fistulous opening, and an antiseptic solution; then evaporating the moisture from the walls of the antrum by injecting a current of air through the same by means of a *Fluoridator*, and the process is continued. I then instilled impalpable powder (boric acid, stearate of zinc with eucalypten, stearate of mercury, or tannin).

I saw the case last Monday, and there was still a purulent discharge through the alveolar fistula (which, by the way, has at no time shown a disposition to close, nor at all produce any annoying consequences to what it had been, but still the result has been less satisfactory than I had hoped or expected it to be).

In conclusion, I will only say that my experience with this case has led me to entertain rather pessimistic views as to their ever yielding perfectly satisfactory results, unless they occur in three cases, before frequently established, and even then when the treatment is more radical than I have been in the habit of employing.

—J. J. J. J. J.

The Idaho State Medical Society will hold its second annual session to be held on Monday, Tuesday and Wednesday morning, June 11th, 12th and 13th, at the residence of Dr. W. B. W. of Moscow.

The Clinique.—It is suggested that the French Language be taught in the Clinique of the St. Louis Hospital.

INCIPIENT INFLAMMATIONS OF THE EAR IN EARLY LIFE, AND THEIR SEQUELÆ.*

By S. MACCUEEN SMITH, M. D.,

CLINICAL PROFESSOR OF OTOTOLOGY IN JEFFERSON MEDICAL COLLEGE;
SURGEON IN CHARGE OF
EAR AND THROAT DEPARTMENT OF GERMANTOWN HOSPITAL, PHILADELPHIA.

It is the object of this paper to present to you a few suggestions for the purpose of stimulating a more general interest in the primary aural inflammations that must necessarily first come under the care of the general physician. The prevention of diseases of the ear and the subsequent deafness, rather than the frequently futile efforts to relieve conditions that could and should have been prevented, must be the aim of all true physicians. The evident lack of interest and information concerning diseases of the ear doubtless arises in great part from the fact that until recently this subject has received little or no recognition from our medical colleges. Furthermore, the demands of an active practice will allow the busy physician but little time to devote to the study of otology, and therefore he has frequently felt impelled to use palliative measures when more radical treatment was demanded.

It has been estimated that from eighteen to twenty-two per cent. of school children are unable to write dictations correctly when the teacher speaks in a high tone of voice at a distance of twenty to twenty-five feet. If these deductions are even approximately correct, it reveals an increasing and alarming affliction among our young population, to which neither our profession nor the public have given due and serious consideration. Now, as the great majority of ear diseases (excepting traumatism) have their incipency in infancy and early childhood, and, as the practitioner of general medicine is always, and very properly, the first to be consulted in all that pertains to the health and physical care of his patient, he must, therefore, to a great extent be morally responsible for the proper management of these incipient ear troubles and for the prevention of the possible serious sequelæ.

He who would not promptly care for and protect the eyes of the newborn infant would indeed be regarded as very remiss and negligent in the performance of his professional duties. If this be true in regard to the eyes, why should not the health of the ears be of equal importance? Within the past three years it has fallen to my lot to see six infants die from disease of the middle ear, and, unfortunately, in every case the trouble had not been recognized until within a few hours of their death. Four of these patients were thought to have been suffering from "brain fever" and two from "meningitis." We should not hastily conclude that a child is "born with a temper" simply because its youthful being is disposed to resent suffering, and so resorts to crying as its only means of expression. When a child frets and cries persistently, and the cause can not be otherwise located, an examination of the ears will frequently reveal the difficulty and suggest prompt means of relief.

* Read before the Pennsylvania State Medical Society, May 16, 1894.

In years past the belief prevailed that there was something mysterious, or at least most intricate, connected with morbid conditions of the ear and their treatment. While this curious impression is still somewhat in vogue, it is nevertheless gratifying to note the gradual disappearance of the gross ignorance and empiricism that divided all diseases of the ear into two great classes, "wax and no wax," "wax curable and wax incurable." Likewise, the charlatan, whose prosperity is usually notable but brief, has been compelled to seek other fields of operation, where he can astonish another credulous community with some startling wonder.

During intra-uterine life there is an accumulation of a semifluid substance within the tympanic cavity known as Wharton's jelly. At about the time of birth this fluid is usually absorbed through the physiological changes that take place in the tympanum, and by means of which air is admitted into the middle-ear cavity immediately following the first cry of the infant. The external auditory meatus is sometimes obstructed by the "cheesy varnish" (vernix caseosa) covering the surface of the fœtus. The presence of this material may cause inflammation of both the drum-head and the meatus itself. We are at times confronted with the statement that "the child was born with a discharging ear." This, however, is not likely to be the fact, for such a discharge in all probability has been caused by the presence of some unabsorbed Wharton's jelly acting as an irritant and exciting a suppurative inflammation of the tympanic cavity. It is well, therefore, to examine the external auditory canal of the newborn child, and if it be free from accumulated material and the membrana tympani is found to be congested, the tympanic cavity should be inflated by Politzer's method. If, however, this fails to relieve the symptoms, the drum-head should be carefully punctured and inflation again used, when the relief will be almost immediate.

The treatment of so-called "cancer," when due to an inflammation in a previously healthy middle ear, becomes an important matter, not only for the purpose of giving relief from the suffering that is at times most intense, but an urgent interest in such cases is especially required from the fact that their prompt and proper treatment is frequently of vital importance to the patient. It is now generally accepted that brain and mastoid complications result from the acute suppurative inflammation of the middle ear, as well as from the chronic form. Having had the misfortune to see a considerable number of those serious complications, the writer must express the belief that they are in many cases preventable, and therefore we must consider it the imperative duty of every practitioner of medicine to be able to promptly recognize and immediately cure for an acute suppurative inflammation (abscess) of the tympanic cavity.

It is necessary that we should recognize two forms of acute inflammation of the middle ear, the one caused by exposure to dampness, sea bathing, the other due to the nasal discharge, dental irritation from decayed teeth, or the long dentition, or through continuity we may have a continuation of some existing catarrhal condition of the throat or nasopharynx, the other form is that so-called "cancer" of the

course of one of the infectious fevers, and is usually purulent in character. The post-nasal space will always bear inspection, especially if the child is a mouth-breather. However, from whatever cause the acute inflammation may arise, the inflammatory product will undergo fatty degeneration, unless the Eustachian tube is sufficiently patulous to drain the middle-ear cavity, or unless the fluid finds egress through an opening made by puncturing the drum-head.

The treatment of an acute inflammation of the tympanic cavity will largely depend on the extent and severity of the attack. If the patient receives treatment during the stage of hyperæmia and consequent hypersecretion of the mucous lining of the Eustachian tube, tympanum, and mastoid cells, the inflammation will have been arrested and confined to the sero mucous or catarrhal stage. If, however, this early care has not been given, the case will progress to the stage of suppuration and subsequent rupture of the membrana tympani. As soon as pain of any character is complained of, bloodletting in front of the tragus is of the first importance. This may be accomplished by applying three to six Swedish leeches, or by the use of the artificial leech* devised by Dr. Gorham Bacon, of New York. There are some advantages in the use of the artificial leech as a means of extracting blood. The difficulty of using the natural leech is overcome in many cases, and especially in children; bleeding from the natural leech is much more difficult to arrest; its bite is painful, and may give rise to an erysipelatous inflammation; natural leeches are not always to be had and are expensive, whereas the artificial leech is always ready for use and inexpensive. In very young children, or in any case where bloodletting is not advisable, a blister in front of the tragus will answer the same purpose, unless the case is a severe one. Inflation of the tympanic cavity is an important part of the treatment in the majority of cases. This is readily accomplished in children by attaching a piece of soft rubber tubing to a Politzer's air bag and inserting this into the nostril; the spasmodic crying of the child naturally prevents the air from entering the throat, and it is thus gently forced through the tube into the middle ear. A continuous stream of a mild carbolic-acid or boric-acid solution—properly heated—should be carefully directed into the external meatus; the bowels must be thoroughly opened and the patient kept quiet. The mastoid is usually somewhat involved, but when promptly treated by running hot or cold water through a Leiter coil, bloodletting or blistering, the slight inflammation will quickly subside.

When this treatment fails to relieve the symptoms, it is safe to assume that an abscess of the tympanic cavity is forming, and no time should be lost in puncturing the drum-head at the most dependent point. It is not well in all cases to wait until there is tingling in the meatus, as this will not occur in every case, and there is always the spontaneous rupture of an abscess to fear. When there is discharge it is best treated by inflating the cavity (Polit-

* This artificial leech was first described by Dr. W. J. Bacon, of New York, and is now manufactured by Dr. J. C. Smith, of New York.

the blind man's countenance when he enters into conversation, for he then forgets his defect; whereas the deaf, under similar circumstances, are only reminded of their infirmity, and really feel downcast when any one addresses them.

Out of fifty-one deaf-mutes that have consulted the writer in the past few months, thirty-seven acquired their affliction, while the remaining fourteen were congenital. Of the acquired ones twenty-one resulted from scarlet fever, nine from diphtheria, five from measles, and four from traumatism. Nine were between the ages of one and two years, sixteen between two and three years, and twelve between three and five years. I think it is safe to assert that most of these acquired cases would have been prevented if the pus in the tympanum had been promptly evacuated at the opportune moment, followed by mild antiseptic irrigation of the external auditory canal, inflation of the tympanic cavity, bloodletting, and proper care of the throat. When this line of treatment is properly carried out, an acute abscess, from whatever cause, will in most cases promptly recover. The relief from suffering is almost immediate, the discharge will have been arrested in a few days, and the hearing is usually restored in two or three weeks.

On the other hand, if this simple but highly important care is not taken, the pain increases in proportion to the distention of the membrana tympani by the progressive accumulation of pus in the tympanum, until finally the pressure becomes so great that the tension of the drum is overtaxed, and with a report quite audible to the patient it ruptures, a copious flow of pus follows, and the suffering is relieved. By this time, however, great damage has been done both to the membrana tympani and tympanic cavity. Instead of the opening in the drumhead quickly repairing, as it will do when incised, its lacerated edges are much slower to mend. The injury done to the delicate mucous lining of the tympanic cavity gives rise to a discharge that becomes more or less chronic, and this in turn is conducive to one or more of the many serious complications that too frequently follow such a condition. Should this discharge continue for any great length of time, caries and necrosis of the ossicles, with destruction of the membrana tympani, and later the walls of the tympanic cavity, are almost sure to occur. Knowing that the bony walls of the tympanum are always thin, that the roof in some cases is entirely absent; that the eustachian canal, through which passes the eustachian artery, forms the anterior wall of the tympanic cavity; that the jugular fossa, in which lies the bulb of the jugular vein, constitutes the floor of the tympanum; and that the middle and back part of the temporal bone, the tube and the outer and front part of the lateral bulb of the ear, can be in direct contact with the middle ear, it is not surprising that even a slight necrosis of the ossicles is productive of more fatal results. It is true, there is a great mass of soft brain matter in the middle ear, but the most delicate mass of soft brain matter is more susceptible to the action of the middle ear than is bone, and thus deaf-mutes, even after a complete abscess of the brain and meninges, often recover, with prohibitive fibrinosis of the lateral bulb, pyemia, and infectious inflammation of the liver and other internal organs.

Therefore, gentlemen, when all this suffering and future affliction can be prevented by prompt and judicious treatment in the incipient stages, we must protest against the neglect and indifference that are so manifest in a large number of these cases. Notwithstanding the fact that these unfortunate complications usually arise from the chronic form of discharge, it must nevertheless be borne in mind that if the initial lesion is promptly and properly treated the disease will be quickly eradicated in the majority of cases, thus not only preventing the discharge from becoming chronic but often aborting the inflammation in its incipency, and so preventing its progress to the stage of suppuration.

1302 WALNUT STREET.

THE PATHOLOGY OF PERNICIOUS ANÆMIA.

By WILLIAM MOSER, M. D.,

PATHOLOGIST TO ST. CATHERINE'S HOSPITAL, BROOKLYN.

THE anatomical changes in this condition are a little varied, and it is to be expected that writers on this subject are a little at variance. The term pernicious anæmia is a clinical designation, which does not betray the underlying morbid condition. It is not a disease *per se*, although some writers regard it as such. Its principal clinical manifestation, the profound anæmia, is dependent upon various morbid processes, the etiology of which is by no means always clear. Malignant disease of the internal organs, especially cancer of the stomach, plays an important part in its pathology. In fact, in the autopsies which I have seen of pernicious anæmia cancer of the stomach was the primary lesion in over half the cases. The secondary pathological effects produced by this primary lesion can not be distinguished from those cases of so-called idiopathic pernicious anæmia—i. e., those cases in which we are unable to determine the primary lesion, the cause. The *Anchylostomum duodenale* is classed by some writers as a cause of this condition. It may be in some parts of Europe. I never saw it in Germany, although I had occasion to see fourteen autopsies of pernicious anæmia in that country. The problem which confronts us is to find the primary lesion, the cause of these cases of so-called idiopathic pernicious anæmia. Certain changes in the stomach (degeneration of gastric tubules) are regarded by some as primary. I fear these investigations are conflicting in cause and effect. What are some of the anatomical changes found at autopsies? The internal organs are markedly atrophic and fatty. In all cases which I have seen fatty degeneration of the heart was present. It is often well marked in the papillary muscles, where one yellowish-white streaks of fat can be seen with the naked eye. Indeed, there is no condition which affects so fully and so fatiguingly the heart as fatty degeneration of the heart, both macroscopically and microscopically. These dense portions forming the heart walls and the papillary muscles of the ventricle are fatty. The fatty portions in the gastric mucosa, but we have been so accustomed to find that contracted anæmia of the heart. I mention this because pathologists

are not agreed as to what constitutes anæmia of the brain. Edema of the lungs, which is always secondary, is not infrequent. Important changes occur in the marrow of the bones. This is best seen by making longitudinal sections though a long bone, like the femur. The marrow is red, reminding one of fetal marrow. The fat cells are replaced by large and small granular cells, and, as Wood and Cohnheim first pointed out, nucleated red blood-corpuscles are seen in large numbers. Lymphomatous growths may at times be seen, suggesting a relationship between pseudo-leucæmia and pernicious anæmia. It is not characteristic for either condition. The spleen usually remains unchanged. The aorta and other vessels present a fatty degeneration of their intima in many cases. Hemorrhages are common on serous surfaces and retina. The most important changes occur in the blood. All observers are agreed that there is a marked diminution of the number of red blood-corpuscles. Instead of containing about five million corpuscles to the cubic millimetre there may be only two million, one million, or even five hundred thousand. It is to this destruction of red blood-cells that we owe the anæmia, the fatty changes, and the deposition of iron in various organs. A fresh section of the liver, for instance, treated with sulphide of ammonium will precipitate in the liver cells dark granules of sulphide of iron. Important chemical differences occur in the red blood-corpuscle. What these changes are will be a difficult problem to solve. The blood is unusually pale.* In pernicious anæmia the red blood-corpuscle imbibes different stains quite readily. The red blood-corpuscle ordinarily will not do this. This becomes more manifest on the living cell, and especially so of its central area. This chromatic property of the red blood-corpuscle is not peculiar to pernicious anæmia on the living cell, but will occur in other conditions and in healthy individuals. But never so readily as in this condition. Ehrlich first drew attention to the fact that quite a large number of nucleated red blood-corpuscles can be seen in the disease under discussion. But on the living cell I have since raised the question whether they are not all nucleated (*vide Medical Record*, 1893). I must confess that in some specimens I could not get a uniform staining of the central mass of protoplasm with a definite outline. And yet may not these cells have had a nucleus some time in their life history? We are not sufficiently acquainted with the life history of cells to answer that question. Caryocinetic demonstrations on the dead cell, as Luzzati has done in that rare disease known as infantile pseudo-leucæmia (Jaksch), and to which attention had been drawn by this investigator and others, for purposes of differential diagnosis, appears to be of doubtful value. I must and his followers regard the possibility of large changes in infantile pseudo-leucæmia as characteristic of the disease. But is it so on the living cell? These questions are *scholarly*. Quincke first drew attention to the fact that the red blood-corpuscle in pernicious anæmia will take the stain of albumen, as a fisher's soap, give shape, etc., etc. The observation has been confirmed by most observers. While it is true that it is

most frequent in this condition, it is not characteristic, but occurs in other conditions. Jaksch (*Klinische Diagnostik*) has drawn attention to this fact. This poikilocytosis, as Quincke called it, is regarded by Jaksch as dependent on contractions in the cell. Friedreich and Mosler were of the same opinion. As a matter of fact this condition of poikilocytosis is nothing more or less than part and parcel of the life history of the red blood-corpuscle—its function of amoeboid movement, which I could demonstrate time and again on the living cell—*i. e.*, in the urine (nephritic urine), where the red blood-corpuscle retains its vitality. In short, I must be at variance with most observers on this subject, because I have dealt with living cells, they have dealt with dead ones.

158 ROSS STREET.

A SUCCESSFUL FOOD FOR INFANTS.

RECORD OF NINETY CASES.

By NATHAN OPPENHEIM, M. D.,

ATTENDING PHYSICIAN TO
THE CHILDREN'S DEPARTMENT OF MOUNT SINAI HOSPITAL DISPENSARY.

As isomeric preparations may be widely different in their physical effects, so an artificial food which according to chemical analysis approximates most closely to human milk may not at all nourish a child as he would be nourished at his mother's breast. This utter contempt for chemistry which we constantly see in very young children keeps alive the search for a food which will in the largest number of cases take the place of the natural milk supply which sickness or accident takes away. It goes without saying that a really perfect artificial food has not been found, and in all likelihood will not be found. The most that we may ask for is one that is easily accessible to everybody, that is cheap, easily prepared, and above all that nourishes the *majority* of children approximately as well as if they were not deprived of their natural nourishment. The final test after all is one of practical experience; and chemical analysis or any other scientific manipulation is merely one of the means to arrive at the desired end.

I am not going to consume space by rehearsing the constituents of human milk and the comparative analyses of prepared foods. Moreover, it is not necessary in this report to write about the *rationale* of a perfect food. Every book of reference can give these details. On the contrary, I wish merely to record my experience in ninety cases in both private and hospital practice with a food which seems to me to approach as nearly to the requirements as any I have as yet used. The preparation is so simple that any one—even an ordinary housemaid—with fair habits of carefulness can make it with ease and certainty. It is prepared thus:

Mix a full teaspoonful of flour and half a cup of cold water; to this add twelve ounces of boiling water and boil for ten minutes in a double boiler. Remove the inner vessel and add to the mixture another twelve ounces of cold water and half a teaspoonful of maltine. Allow it to stand for fifteen minutes in order to let the diastase act upon the starch. Replace the vessel in the boiling water and

* Dr. Van der Korff (N. Y. Med. Record, 1893) has shown that the blood in this disease is not granular as in the pernicious anæmia of adults.

boil again for fifteen minutes. This mixture, after being strained, should be added to an equal quantity of fresh milk. Naturally, one may change the proportion of milk according to individual cases.

Of the ninety cases, seventy-seven were babies between the ages of three weeks and fourteen months. All of them were suffering with characteristic disorders of malnutrition or malassimilation—such as gastritis, enteritis, or both, "idiopathic atrophy," diseases of the skin traceable to visceral lesions, and one case of congested and enlarged liver of five weeks' duration which became well with no additional treatment than dietary. Of these seventy-seven, sixty-three improved immediately and continued to thrive. Thirteen required additional treatment; and one, although fed carefully, showed no improvement. This last child was tried on a wet nurse and three other foods successively before the proper nourishment was found.

The other thirteen cases were children over fourteen months and under twenty-six months of age. They were suffering from various diseases associated with malassimilation caused by or coincident with the primary disease. All of them within varying spaces of time took kindly to this food and thrived on it. Among them are the following two, which are characteristic enough to bear recording:

CASE I.—J. R., aged nineteen months, suffering from acute enteritis. For the first two days the patient was unable to retain anything on his stomach. Then, after being made quiet with opium, he retained this food without interruption up to the time of recovery.

CASE II.—O. S., aged sixteen months, suffering from proptosis of rectum following acute enteritis. After the lower bowel had been washed out with a solution of boric acid, the patient recovered on no additional treatment outside of this food.

45 WEST FORTY-SEVENTH STREET.

REPORT OF A CASE OF RENAL CALCULUS. NEPHROLITHOTOMY.

By H. W. RAND, M.D.

REPORTER.
SURGEON TO THE LONG ISLAND HOSPITAL—DR. JOHN A. ANDERSON, CHIEF SURGEON.
AND HENRY CHURCHILL HOSPITAL.

The comparative infrequency of this disease in this part of the country induces me to report the following case.

The patient, a boy, aged fourteen years, was referred to me by Dr. W. H. Shepard. He stated that he had at times during the past three years suffered from severe pain in the right side. It was most likely to appear at night, and most marked during such an attack a burning or stinging. At first it lasted only for a few minutes at a time, and was confined to the loin and abdomen, not extending to the testicle. It was always associated with frequent but somewhat painful urination. The urine was of a dark, but not bloody, color, and did not contain blood. Some of the pain was of the paroxysmal or paralytic nature, many times and of longer duration, sometimes lasting all night. The most comfortable position during these paroxysms was to lie erect with the trunk bent to the left side. The father stated that since the boy was five years of age he has been in the

habit, when walking or playing, of leaning to the right side and holding his hand to that side.

The patient was well nourished, but pale. Palpation showed the right kidney to be somewhat enlarged and very tender. During a paroxysm of pain the most marked tenderness was found to be immediately above the crest of the ilium in the axillary line and not over the kidney. Muscular rigidity in the loin and over the abdomen was also prominent during pain.

Upon these symptoms, the diagnosis of probable renal calculus was made and operation advised. Examinations of the urine made by Dr. W. C. Gardner tended to confirm this diagnosis. His report on two specimens was as follows:

No. 1.—Total quantity in twenty-four hours, fourteen ounces; reaction, acid; specific gravity, 1.020; albumin, a trace; sugar, none; total quantity of urea, 97.16 grains. Microscopical examination showed uric-acid crystals in abundance, flat epithelial cells, a few leucocytes, and some stringy mucus.

No. 2.—Total quantity in twenty-four hours, forty-three ounces; reaction acid; specific gravity, 1.014; albumin, a trace; urea, 218.28 grains. Microscopical examination showed oxalate-of-lime crystals in abundance, a few red blood-cells, some leucocytes, mucous cylinders, stringy mucus, small round and flat epithelium. Further examination showed one or the other of these crystalline deposits to be present in the urine when first voided.

November 24th.—I exposed the kidney by an oblique lumbar incision and found it enlarged and its lower end extremely hard, feeling more like fibrous tissue than normal kidney. No stone could be felt by palpation. While passing a fine needle into the organ in different directions I felt at one point a characteristic grating sensation, and on opening the pelvis found the stone at its lower extremity. No second concretion could be detected. A drainage-tube was introduced to, but not into, the kidney, the upper portion of the wound in the loin closed with sutures, and the lower part lightly packed with gauze. The calculus weighed thirty-four grains. It was of a somewhat irregularly triangular shape, two of the angles having the conformation of a mulberry calculus, the third being less roughened. At spots over its surface were deposits of crystals of uric acid. The pain following operation was quite severe and continuous. At the end of twelve hours he passed, voluntarily, eight ounces of bloody urine, but for the next twenty-four hours catheterization had to be resorted to, probably on account of the comparatively large amount of opium required to control his pain.

The most noteworthy incident during his convalescence occurred on the third day, when, after six or seven hours of entire freedom from suffering, he was seized with a continuous pain in the diseased kidney and along the course of the ureter. His temperature rose rapidly from 101° to 106° F. After several hours the pain suddenly ceased and his temperature fell again to 101°. At the next urination he passed a long, slender clot, which in its course through the ureter had given rise to his pain and high temperature.

No further blood formed the *Albugo* (pus) of the stone. The following symptoms: The stone remained loose in the blood until the eighth day, when it was passed; after this wound closed without further trouble. At present, six months after operation, the boy is doing perfectly well, and the urine of a normal character.

A New Medical Baronet.—An announcement from Dr. John Williams of London, who attended the Emperor of Spain in his last illness, has just been made to the effect that

Change of Address.—The office of Dr. J. A. Rand, D.M.S., is now at 45 West Forty-seventh Street.

presented interesting facts regarding the dangers of curetting, showing how, in certain conditions, this simple operation might be a dangerous one. It had been so abused, it was said, that for several years a reaction had been going on and distinguished physicians had rejected it more and more and replaced it with uterine dressings. Curetting was an excellent operation, but it should first be indicated, then it should be well done, and, finally, the subsequent care should be attended with the greatest antiseptic precautions. Many maintained that, after uterine dilatation with intra-uterine dressings, the result was the same. This was very evident, it was said, but in certain cases this method was more tedious. When fungous growths formed a thick layer, it was more rational to destroy them with a sharp instrument and to treat the uterine cavity like an ordinary wound.

Curetting entailed several dangers, the principal of which was perforation of the uterus: but here again one must distinguish carefully. This perforation was easily done in certain conditions; and it was very rare in commoner cases. If it was a case of metritis, the mucous membrane of the uterus was especially affected. The uterine tissue was resistant, offering a solid level on which the curette might be rested, and by proceeding carefully and gently the uterine wall was not likely to be injured. This was not so when it was a case of abortion, and the uterus was incompletely emptied, so that retained portions of placenta called for intervention. Here the tissues were greatly changed, and the thickness of the uterine wall was very much diminished. The uterine cavity was of irregular dimensions, and when disseminated parts had to be detached from the healthy parts with the curette, one was apt, although proceeding with caution, to make a solution of continuity and to penetrate into the peritoneal cavity. Instances of this kind were principally cited, but what constituted the peculiarity of these observations was that the need was so large that an intestinal coil had penetrated the uterine cavity.

In a case cited by Albert, the patient, thirty-two years old, had been attacked with metrorrhagia after a period of menstrual suppression. There was a fatal bloody flow and the neck of the uterus was dilated. The physician, with the idea that he had to deal with an abortion with retention of the membranes, performed curetting and introduced a forceps into the uterus in order to remove a piece of membrane which remained. But instead of the membrane, he brought an intestinal coil down to the vagina. At once he applied a clamp of catgut suture to the uterus and had the patient taken to a hospital. Since Albert performed laparotomy immediately. An intestinal coil, containing contents from lungs, passing through a rent in the uterus, was so wedged in the cervix that it could not be extracted and part of it was of the neck had been done. The coil was removed, the uterus was closed with four layers of catgut suture, an incision was made, and the woman recovered.

There must have been some error, I am afraid, that such operations should not be done carelessly, but should be performed by an experienced physician. It was well known that the danger in the perforation of the uterus was considerable,

but these accidents could not cast discredit on curetting, which, in these conditions, should be practiced as a preventive of the terrible results of infection from retained portions of placenta.

MINOR PARAGRAPHS.

AN UNMARKED QUOTATION

In our issue for June 30th we published a communicated article entitled Potassium Permanganate and Zinc Sulphate as Injection in Gonorrhœa, by Dr. Joseph D. Farrar, of Baltimore. Our attention having been called to the matter by several of our readers, we regret to find that the last three paragraphs of the article are almost word for word the same as a passage in Dr. J. William White's excellent article on Gonorrhœa in *Hare's System of Practical Therapeutics*. We must presume that our contributor inadvertently neglected to use quotation marks.

THE AMERICAN JOURNAL OF INSANITY

In a circular dated July 12th the retiring editor, Dr. G. Alder Blumer, announces that the *American Journal of Insanity* has been sold to the American Medico-psychological Association, and will be edited by a committee consisting of Dr. Edward Cowles, of Boston; Dr. Henry M. Hurd, of Baltimore; and Dr. Richard Dewey (in immediate editorial charge), of Chicago; and that until further notice it will be published in Chicago.

THE CHOLERA IN RUSSIA

A TELEGRAM received by Surgeon-General Wyman, of the Marine-Hospital Service, on Wednesday, from Surgeon Irwin, one of the representatives of the service abroad, is to the effect that Dr. Irwin regards the prevalence of cholera in St. Petersburg as serious. It seems that fifteen hundred cases have been reported there since the 1st of July, including two hundred and eighteen on Monday of this week.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 17, 1894:

DISEASES.	Week ending July 10.		Week ending July 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	2	17	1
Scarlet fever	20	3	20	1
Cerebro-spinal meningitis	5	1	—	—
Mumps	5	4	21	1
Diphtheria	18	4	22	2
Small Pox	5	—	4	—
Unlabeled	40	2	22	11

The late Dr. Samuel T. Hubbard.—At a recent meeting of the Union of Physicians of the New York Society and the Faculty of Physicians and Surgeons of Maryland and the following eulogy was read by Dr. Nathan T. Farber. The eulogy of Dr. Samuel T. Hubbard was read and read in the presence of the Society. It was well known that a national meeting of the Society was held and on Dr. Hubbard's death in the medical journals of the day the following was published:

bers of the society. It was also ordered that they be incorporated in the annual report of the society:

"Died June 1, 1894, Dr. Samuel T. Hubbard, at the age of eighty-six. This is the last link which bound us to the founders of this society. Of the original members whose names appear on the list for 1842, all are gone now; the last leaf has fallen from the tree. The fathers are no longer with us, they are but a memory, a reminiscence. 'The King is dead, long live the King.' Dr. Hubbard was our Nestor, and I do not see how one could have been very long in his presence without being strongly attracted by his most lovable personality. It was not the attraction of a weak old age, it was not the attraction of an overpowering intellectuality. No, his was the vigor of the rugged oak which is in its prime when other trees around it are decaying, or of the stanch old ship with timbers sound and spars unbending after many a storm, being made of honest material through and through. He made you think of Moses, with his more than four score years, looking over into the promised land, his eye undimmed and his natural force unabated, and from the heights of his serene old age I doubt if one ever saw him looking back to the remote days of the past and making comparisons unfavorable to the present. It would not have been like him to do so, for his life, so far as I have known it or could ascertain, was one of charity and beauty. There is something about the physicians and surgeons of New York of half a century ago, a subtle quality, which it seems to me is not developed to the same degree with us. I do not mean genius, though Mott, and Parker, and Kearney Rodgers, and others of our early *confrères* possessed that. It may be that it was strong common sense, or something allied to it, a power of handling men and women to advantage, a *savoir faire*, and perhaps in our more assiduous cultivation of science we have somewhat overlooked that important qualification. Such a quality our dear friend possessed to a considerable degree. In the meetings of our society how we shall miss him! He was always present, always prompt in his attendance, genial and wise in discussion, leaning toward the broadest charity in the objects for which our society is conducted. Peace to his ashes! His memory will long be fragrant among us. 'His life was gentle, and the elements so mixed in him, that Nature might stand up and say to all the world, 'This was a man.'"

Spina Bifida Occulta with Hypertrichosis Lumbalis.—

Schon (Berliner klin. Woch., 1894, No. 5) reports an interesting case of this nature which was found in a thirteen-year-old girl. There was no history pointing to a hereditary tendency to deformity. Scoliosis was first noticed when she was seven years old. When she came under notice the lumbar region was covered with a dense growth of hair, and the skin was pigmented, forming thus the *faux lion* described by the author. The spine presented the following peculiarities and of the upper sacral vertebrae had not united, but a strong growth of three fused and small vertebrae. There was no pain or pressure. On the left side of the lower lumbar region there is a prominent swelling, but a constant pulsation of the hip.

Army Intelligence.—Official List of Changes in the Medical Corps of the United States Army for the week ending July 14, 1894:

GLENDENIN, PAUL, Captain and Assistant Surgeon, now on leave of absence, will accept of a permanent change to the position of Assistant Surgeon of the Medical Department.

GLENDENIN, PAUL, Captain and Assistant Surgeon, now on leave of absence, will accept of a permanent change to the position of Assistant Surgeon of the Medical Department.

GLENDENIN, PAUL, Captain and Assistant Surgeon. The leave of absence granted for seven days is extended twenty-three days.

Naval Intelligence.—Official List of Changes in the Medical Corps of the United States Navy for the week ending July 14, 1894:

FARENHOLT, AMMEN, Assistant Surgeon. Ordered to the Naval Laboratory and Department of Instruction, New York.

KINDELBERGER, CHARLES F. Appointed an Assistant Surgeon.

Society Meetings for the Coming Week:

TUESDAY, July 24th: Medical Society of the County of Putnam (annual), N. Y.

WEDNESDAY, July 25th: Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (Lowell).

Letters to the Editor.

BLEEDING FROM THE NOSE.

NEOLA, IOWA, June 27, 1894.

To the Editor of the New York Medical Journal:

SIR: In the *Medical Record* of June 9th appeared an article from the pen of Dr. Kohn, of New York, on Nosebleed. In this article, which is very elaborate and evidences considerable research, he fails to mention one of the most valuable therapeutic agents in this malady. I refer to the hypodermic use of ergot. I care not whether the hemorrhage is due to traumatism, ulceration, or the peculiar dyscrasia of the system called hemorrhagic diathesis. Ergot, thirty drops of the fluid extract hypodermically, has acted charmingly where every other measure I brought into requisition failed. One case in particular was that of a little girl, nine years of age, who was struck on the nose with a missile, and had bled for some hours previous to my arrival. I found her almost exsanguinated. She was still bleeding copiously, and in a state of tremor and great nervous excitement. Her face was blanched, not from fright, for she did not realize danger, but from loss of blood. She was pulseless and her eyes presented an anxious, glassy expression. After trying fruitlessly the customary therapeutic remedies, I endeavored to tampon, but each attempt threw the child into a nervous spasm. Concluding that radical measures were impracticable without anesthesia, the hypodermic administration of fluid extract of ergot with digitalis occurred to me. This I suggested to my consultant. Fifteen drops of ergot and three drops of digitalis (diluted) were given. Immediately the bleeding stopped and did not recur.

Two cases of mucous patches, but in reality ulcers, from which bleeding occurred at frequent intervals—one in a young lady, seventeen years old—I have cured with local applications once a week of nitrate of silver (twenty grains to the ounce) to the ulcers only.

A gentleman I have under my care now has been bleeding for two years, at intervals of a few days to a week or so. He becomes heated, the bleeding occurs daily. I prescribed ergot, which checked it at once. Inspection of the nasal sinuses disclosed hypertrophic rhinitis, with numerous erosions of the septum, and of the middle turbinate bones, especially of the right sinus. The electro-cautery and nitrate of silver, three grains to the ounce to the erosions, will cure the epistaxis.

J. H. LOWERY, M. D.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 29, 30, and 31, 1894.

The President, Dr. WILLIAM T. Lusk, of New York, in the Chair.

Extirpation of the Uterus in Disease of the Annexa.—

Dr. J. M. BAIRD, of Philadelphia, read a paper on this subject. The question as to whether the uterus ought to be removed in disease of the appendages, he said, was one that was constantly being brought up, and one that he hoped would be very thoroughly discussed and a consensus of opinion elicited from the present meeting. One of the first questions that were asked was, Was the uterus useful or necessary after removal of the ovaries? The author thought there was only one use in the body for the uterus, and that was for the development of the embryo. So long, then, as the relations of the vagina and cervix were retained the uterus could be removed with the diseased annexa to the great benefit of suffering women. Where operations were done for diseased ovaries and tubes, was it the rule to find all inflammations cured, or was not every one familiar with the return of pain and discomfort? Again, were all patients cured after double oophorectomies? It was the common experience to have patients return with leucorrhœa, pain, tenderness, etc., after such operations. Hysterectomy was not a dangerous operation, and need not make the mortality any greater than the procedures usually followed. The author was able to report twenty-two successful operations for varying degrees of disease, and in all the cases the symptoms had been entirely relieved and there had been no return of disease.

Where the annexa were removed the uterus usually sank to the floor of the pelvis, producing a train of symptoms quite as disagreeable as those for which the original operation had been performed.

Leaving the uterus left a nidus for tuberculosis; this had been known to follow in a considerable number of cases. It was rare to find disease confined to one particular spot; but where disease was found in the tubes or ovaries there was usually a concomitant method condition in the uterus. Consequently, where laparotomy was to be done for tubal disease and the uterus was found enlarged, infiltrated, and congested, he felt that hysterectomy was justified. Of course, the mortality might be urged, but, as there really was no cure unless all diseased tissue was removed, he favored complete removal. As for the term of operation he much preferred the abdominal method; it offered the advantage of allowing of dissection of all diseased structures, which could not be had by vaginal hysterectomy. Besides its allowing of the complete removal of diseased tissue, the drainage was better and the mortality very much less than in the vaginal operation.

Dr. FREDERICK LANE, of New York, thought that the best form of operation for women suffered from partially cured from the uterus. Where the appendages were diseased after hysterectomy, vaginal hysterectomy was the best method of doing away with the diseased and useless uterus. It was usual to find that if diseased conditions were found in the uterus and hysterectomy was not done, the operation was useless.

Dr. H. T. HARRIS, of New York, believed that there were other conditions besides disease and cancer, for which hysterectomy might be performed. He had found that where removal was complete the recovery was perfect, and that where the uterus alone was removed the patient had no return to require palliative treatment. He had thought of the

that the failure of cure was due to faulty technique, but after years of very careful work he had decided that the fault lay in not having removed all disease. He thought that there were three conditions in which hysterectomy was justified! First, where there was an old pyosalpinx with catarrhal or purulent endometritis; secondly, in cases of puerperal salpingitis and endometritis, with high temperature; thirdly, where an operation was being performed for the removal of the tubes and ovaries, and they were found displaced and bound down and the uterus diseased. In the latter class the uterus should be removed to get rid of all disease and also to insure good drainage.

Dr. BACHE McE. EMMET, of New York, after reviewing the history of hysterectomy, asked if it was not possible for a new disease to spring up in tissues from a change in circulation such as there would be in the uterus after removal of the tubes and ovaries. It was possible that where symptoms had continued after the removal of the tubes and ovaries the diagnosis had not been correct, or that the technique had not been perfect and that a portion of diseased ovary had been left. Another question that was to be taken into consideration was as to whether the woman wanted to be entirely relieved of her suffering and be sterile, or whether she wanted to stand a chance for childbearing. He was convinced that there were a great many cases in which the operation of complete removal was undoubtedly called for, but they ought to be considered exceptional cases. Abdominal hysterectomy was a much more difficult operation than removal of the tubes; there was much more shock and, as a rule, patients that required radical measures were much reduced in vitality, so that great care was called for in the selection of cases.

Dr. W. GILL WYLLIE, of New York, had come to the conclusion that, as the difference of opinion brought out in the discussion was so slight, we must be approaching the truth in regard to hysterectomy. He objected to the operation on the general principle that every uterus ought to be removed where there was disease of the tubes and ovaries. Where there was fibroid, cancer, or a septic condition, or where the woman was over thirty-five years of age, hysterectomy was called for. He thought that where the suffering had continued after an operation it was due in most instances to the incomplete removal of disease, and that if the uterus had been treated and cured before the laparotomy the results would have been different. It was his experience to find reflex disturbances after complete removal of the tubes and uterus. A normal uterus at the menopause was not troublesome. He thought that a more careful study of the immediate and remote effects of removal ought to be made. He had noticed that there were changes in the characteristics of women after hysterectomy. In young women who had borne children the first change in the genital organs was hyperæsthesia, and finally atrophy. In some there were intractable erosions. These unpleasant symptoms did not obtain in women over thirty-five or forty. There was no doubt that the operation was of more benefit than the removal of the tubes only.

Dr. WILLIAM H. WATKINS, of Louisville, was strongly opposed to removal of the uterus unless the indications were very well marked. We all knew that many recoveries promptly from hysterectomy, and that even hysterectomy was not necessary. He did not believe that more than one-third of such cases should be to be cured by removal of the tubes alone; if this operation did not actually cure the disease, it was not a cure.

Dr. HENRY F. WELCH, of Chicago, thought that, in every case, the essential question had not yet been met, but the most important of the most of years, under treatment, and that the operation was not the best, but certainly a remedy. There

means should be employed before a uterus was sacrificed, for several reasons. Atrophy followed in young women, consequently the organ should be allowed to remain, if possible, for æsthetic reasons if for no others.

Dr. GEORGE M. EDEBOLM, of New York, thought that it was unfortunate to have put the question as it had been put, for and against hysterectomy. He did not think that the operation had been under observation long enough to justify a positive conclusion. For his part, he thought that the operation through the vagina gave good drainage, and where there was disease of the uterus impossible to cure otherwise, complete removal was the wisest plan to adopt. Where there were many adhesions and much disease, abdominal hysterectomy offered the best drainage. Where the uterus was fit to leave, ventral fixation was recommended.

Dr. A. R. CRISHING, of Ann Arbor, thought that the question of the operator came in very strongly, because there were many who could do the operation for removal of the tubes, but who would not be skillful enough to do hysterectomy. He thought that a drainage-tube, properly applied, could drain the entire pelvic cavity. He could see, everything being equal, how in many cases hysterectomy would be desirable.

Dr. JOSEPH E. JANVIX, of New York, thought that there was one point to be decided, and that was, To what extent should the disease be allowed to go before hysterectomy was justifiable? Where there was minor disease of the uterus the speaker objected to the operation. Great care would have to be exercised in the selection of cases for operation: if, on opening the abdomen for disease, the uterus should be injured or found involved, its removal ought to depend entirely upon the judgment of the operator. As to the fatality, in the hands of a skillful operator it ought to be but slightly greater than where the tubes and ovaries alone were removed.

Dr. SETH C. GORDON, of Portland, Me., thought that the intermenstrual pain so frequently complained of, and so obstinate of cure, would be entirely relieved by hysterectomy. In these cases an operation frequently revealed no disease of the tubes or uterus, but the pain was often intolerable and something that would cure was called for. Of course, where the organs were diseased complete removal was the proper operation. In young women the uterus ought to be left as long as possible.

Dr. CHARLES P. NOBLE, of Philadelphia, had operated seventy-five or eighty times by hysterectomy, and only three or four had ever given any trouble afterward, the recoveries being perfect. The operations had all been done for chronic disease: in some cases the condition got well promptly after removal of the uterus.

Dr. BRYAN firmly believed that we got as good results by hysterectomy as by any operative means. Where there was disease of the tubes and ovaries, with disease of the uterus, removal was called for. No good could follow the retention of a diseased organ in the body. The speaker opposed to the operation in a great part of the country.

Dr. J. PHILIP DUNN, of New York, believed in hysterectomy. He thought that hysterectomy was a very good operation. He thought that the uterus should be removed in all cases of chronic disease of the uterus. He thought that the uterus should be removed in all cases of chronic disease of the uterus. He thought that the uterus should be removed in all cases of chronic disease of the uterus.

Dr. HARRISON HAY, of New York, believed in hysterectomy. He thought that the uterus should be removed in all cases of chronic disease of the uterus. He thought that the uterus should be removed in all cases of chronic disease of the uterus. He thought that the uterus should be removed in all cases of chronic disease of the uterus.

tuberculous, and therefore hysterectomy was desirable. He did not like vaginal hysterectomy.

The Treatment of Face Presentations.—Dr. EDWARD R. REYNOLDS, of Boston, read a paper with this title. He said that face presentations were frequently caused by some one or more of the mechanical complications of labor, such, for instance, as a flat pelvis or small fibroids in the lower uterine segment, or might themselves be complicated by one or more of the accidents of labor, such as prolapsed funis, hæmorrhage, and eclampsia. The treatment of such cases should be primarily determined by the nature of the complication rather than by the abnormal presentation. The author confined his remarks entirely to the method of treating uncomplicated cases of face labor. His management of such cases was directed to the following points: When a face presentation was detected before the engagement of the face, and before the rupture of the membranes had occurred, there was always reason to hope for a spontaneous restoration of flexion. The obstetrician should therefore confine himself to the adoption of postural treatment and gentle external manipulation until the occurrence of engagement or the rupture of the membranes rendered a spontaneous flexion improbable. When the membranes had ruptured early, external bipolar version should at once be performed in any case in which the condition of the cervix rendered manual dilatation of the os dangerous. In ordinary conditions of the cervix manual dilatation should be undertaken immediately after the rupture of the membranes and the head flexed by the hand. The subsequent treatment should be operative, but dictated by the position. When the membranes persisted until the cervix was completely dilated an anterior position of the chin should be left to Nature so long as the progress of the labor was rapid and the fetal heart was steady, but when any irregularity of the fetal pulse or even a moderate delay at the brim had been detected, the patient should be anesthetized and the head flexed. The posterior position of the occiput so produced should not be left to Nature, but should either be treated by version or, preferably, rotated to the front by the hand. It might then be left to Nature or treated with the forceps. A posterior position of the chin should never be left to Nature, even though the os had been completely dilated by the membranes, but should always be subjected to an immediate manual flexion. The anterior position of the vertex which resulted might then be left to Nature or the child might be extracted with the forceps. In neglected cases in which manual flexion was contra-indicated version should be chosen if it was practicable, whatever the position of the chin. If version was contra-indicated, such cases should be treated by the immediate application of the forceps to the face as such. In posterior positions of the chin this operation should always be preceded by rotation of the chin to the front. In cases in which the face presentation was due to some other mechanical obstruction, the treatment should be determined by the latter factor. The abdominal methods of delivery were never indicated in uncomplicated face labor.

Dr. C. F. JEWELL, of Brooklyn, said that it was his experience to find in complicated face presentations that, while the labor was slower, it usually terminated normally. Where interference was found necessary, it was his plan to anesthetize the patient and explore the pelvis to ascertain the relation of the head to the part, and correct the position at the same time. There were two classes of cases which determined the form of treatment:

Those in which the face presented above the brim and was movable, and those in which it was already engaged in the pelvis. The first class usually terminated favorably, but the speaker preferred to bring down the occiput. If the face

filling the place of a complete, systematic work on the nose and throat. Finally, it is certain that hereafter no laryngological library can be considered complete without this valuable work, which is sure to contribute to the reputation of its distinguished authors.

Études de chirurgie infantile. Les hernies inguinales de l'enfance. Par le Dr. G. FÉLIZET, chirurgien de l'hôpital Tenon. Avec 73 figures dans le texte. Paris: G. Masson, 1894. Pp. xiv+42. [Prix, 10 fr.]

This is said to be the first work devoted exclusively to the subject of inguinal hernia in children. It is purely clinical in character, and is based on recorded observations of one hundred and five cases in the great service of the hôpital Tenon, where special wards were established five years ago exclusively for infantile surgery. The pathological anatomy is deduced from direct observations made upon the patients who were subjected to operation. The author believes there are two general classes of congenital inguinal hernia. The first is due to malformation, the second to simple dilatation of the inguinal canal. The first form can only be relieved by surgical measures. The second often disappears under palliative treatment. The author believes that these two forms can be distinguished clinically, and that the surgeon can determine with considerable certainty which cases may be relieved by the bandage or truss and which will require operative interference. The details of the operation are described with great minuteness and are fully illustrated. The little patients are usually discharged cured at the end of a month after the operation.

Palliative treatment is not neglected, for the author does not operate when simpler measures will accomplish an equally good result. He uses either a rubber or a steel spring truss, and describes its method of application minutely. An appendix contains the detailed histories of the cases of operation which seem to show most satisfactory results.

Légons de thérapeutique. Par GEORGES HAYEM, professeur de clinique médicale à la Faculté de médecine de Paris, etc. Les agents physiques et naturels. Agents thérapeutiques. Électricité; modification de la pression atmosphérique, climats et eaux minérales. Avec 140 figures et 1 carte des eaux minérales et stations climatiques. Paris: G. Masson, 1894. Pp. viii+692. Prix, 12 fr.

A more thoroughly satisfactory work upon its subjects would be difficult to imagine. The completeness with which each subject is considered is unusual, and yet it is not a wordy completeness, for the entire work is characterized by an economy of words and a short, sharp, and clear condensation of the questions under discussion, which but adds to its completeness. It covers well, however, the limits of the book. In hygiene, in climatology, in constitution and pathophysiology, in electricity, and especially in the treatment of the different conditions this course has been studied and taught in a superior manner.

It is difficult to overpraise, among so much excellence, and perhaps the most perfectly satisfactory, are the chapters on thermal agents, under which is included balneology. These chapters may be taken as the most excellent of the work, those on climatology and electricity being also of high merit.

A highly interesting addition to this volume is a study of France and of central Europe, showing the location of mineral springs, watering places, and climatic health resorts.

To the student, however, the volume on thermal balneology, this volume is a treasure and a work of inspiration. Its consideration has given us the greatest satisfaction.

Materia Medica, Pharmacology, and Therapeutics. Inorganic Substances. By CHARLES D. F. PHILLIPS, M. D., LL. D., F. R. S. (Edin.), Late Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School, etc. Second Edition. London: J. & A. Churchill, 1894. Pp. xiv+898. [Price, 21 shillings.]

The first edition of this work was published in 1852, and since then such changes and discoveries have occurred in our knowledge of drugs and of therapeutics that, while the book remains essentially the same in scope and plan, it is otherwise much altered.

Usually complete and valuable are the therapeutic considerations contained in it, and of special worth, too, are the chapters upon water and upon bathing.

The book is in every way an improvement upon the first edition, as well as an advance, and we await with interest the promised appearance of its companion volume on the vegetable, animal, and organic compounds.

The Year-book of Treatment for 1893. A Critical Review for Practitioners of Medicine and Surgery. By Various Contributors. Philadelphia: Lea Brothers & Co., 1893. Pp. viii+496.

Is the present volume Dr. J. Mitchell Bruce is the author of the section on Diseases of the Heart and Circulation; Dr. E. M. Skerritt, of that on Diseases of the Lungs and Organs of Respiration; Dr. E. S. Reynolds, of that on Diseases of the Nervous System; Dr. R. Maguire, of that on Diseases of the Stomach; Dr. C. H. Ralfe, of that on Diseases of the Kidneys; Dr. A. E. Garrod, of that on Gout and Rheumatism; Dr. S. Phillips, of that on the Infectious Fevers; Dr. Dawson Williams, of that on Medical Diseases of Children; Mr. Stanley Boyd, of that on General Surgery; Dr. D. W. Buxton, of that on Anesthetics; Mr. W. J. Walsham, of that on Orthopedic Surgery; Mr. E. Owen, of that on Surgical Diseases of Children; Mr. R. Harrison, of that on Diseases of the Genito-urinary System; Mr. Alfred Cooper, of that on Diseases of the Rectum and Anus; Mr. J. E. Lane, of that on Venereal Diseases; Mr. G. E. Herman, of that on Diseases of Women; Dr. M. Handfield-Jones, of that on Midwifery; Mr. M. Morris, of that on Diseases of the Skin; Mr. H. Power, of that on Diseases of the Eye; Mr. G. P. Field, of that on Diseases of the Ear. Mr. R. J. Barton, of that on Diseases of the Throat and Nose; Dr. W. Hunter, of that on Bacteriology in Relation to Treatment; Professor W. H. Corfield, of that on Public Health and Hygiene; and Dr. Walter G. Smith, of the summary of the therapeutics of the Year 1892-93.

The literature of the various subjects has been carefully reviewed, and the topics are epitomized in a satisfactory manner. The volume more than sustains the reputation of its predecessor.

BOOKS RECEIVED.

Text-book of Abdominal Surgery. A Clinical Manual for Practitioners and Students. By Skene Keith, F. R. C. S. Ed., assisted by George T. Kelly, M. B., C. M., with Illustrations. Philadelphia: J. B. Lippincott Company, 1894. Pp. xiv+300.

Text-book of Medicine and Physiological Chemistry. By Elias H. Sargent, B. S., M. D., Professor of Chemistry and Physiology in Long Island College Hospital, etc. New York: Also, second and enlarged. With Physiological Chemistry. Philadelphia: P. Blakiston, Son & Co., 1894. Pp. xiv+340. Price, 10 sh.

On Binding of the Library in Direct Succession. A Study in Progress. Based chiefly upon American literature during the

relates how he watched a little girl, whose face, hands, and ears were covered with sores, purchase an ice cream, and lick out the glass in the customary fashion. The vendor did not wash or even wipe the glass, but at once filled it and handed it to another young customer, who repeated the process of sucking and licking. Last summer a case occurred in which it was proved that milk used in the making of cheap ices was from a source responsible for the dissemination of typhoid fever. It is clear that an industry which consists in the vending of an article of food which, under present circumstances, may contain anything from a louse to a typhoid bacillus needs to be brought under the most careful surveillance of sanitary authorities."

A Masonic Home for Consumptives.—With the consent of the Grand Master of the Grand Jurisdiction, A. F. and A. M. of New Mexico, the Montezuma Lodge, of Santa Fé, has adopted a resolution setting forth "that the death-rate from consumption is increasing at an alarming rate all over the world; that the benefits of climatic cure are now universally recognized by physicians; that the most perfect climate is found at Santa Fé," and inviting the Masons of the United States and Canada to co-operate with Montezuma Lodge in the erection there of a national home for consumptives, to be governed and maintained by Masons for benevolent and charitable purposes. —*Journal of the Am. Med. Assoc.*

Myrrholine, according to the *Revue internationale de bibliographie médicale, pharmaceutique et vétérinaire*, is a solution of myrrh in its own weight of oil. It is said to have been found useful in tubercular laryngitis, given in capsules each containing three grains of myrrholine and from four and a half to five grains of creosote. An ointment of one part of myrrholine and two parts of vasoline is reported to act favorably in cases of eczema about the nostrils.

The Diagnosis of Tuberculosis by Microscopical Examination of the Blood.—The Colorado State Medical Society offers a prize of \$100 for the best essay on this subject, open to universal competition. Essays should be handed in, under the usual seal of secrecy, to Dr. S. A. Fisk, of Denver, on or before April 4, 1895.

A Local Anæsthetic Solution.—Dr. J. H. Lowrey, of Neola, Iowa, speaks favorably of the following combination:

Cocaine hydrochloride, 1	each,	16 grains,
Roacetan, 1		
Distilled water		2 ounces,

He has found that the use of this solution is not followed by the systemic disturbances that cocaine alone sometimes produces.

The British Medical Association will hold its sixty second annual meeting in Bristol on Tuesday, Wednesday, Thursday, and Friday, July 21st and August 1st, 2d, and 3d.

The Action of Spermine.—At a recent meeting of the *Société nationale de médecine de Lyon*, a report of which is published in the *Journal médical de Marseille*, Dr. Falc of St. Petersburg, read a paper on the thermogenic effects of spermine, in which he said that spermine did not have its own action, but in the future would appear at the scale. He had found that the presence of H₂O in the thyroid gland in the thyroid and in the pancreas, as it was a substance which caused the decomposition of the animal gland of meat and animal substances, that the action, produced by a great number of properties of association, the presence of cellulose, which was in the case, stated by the following statements:

1. In the presence of spermine, the decomposition of meat is retarded by a solution of the chloride of sodium and of sodium

metals (copper chloride and gold chloride, for example); moreover, this oxidation, instead of being at the expense of the oxygen of air, is at the expense of the oxygen of water, which is decomposed by the catalytic action of spermine.

2. Blood which has lost its oxidative qualities by the action of chloroform, protoxide of nitrogen, etc., may regain them if a small quantity of spermine is added.

3. Professor Tarchanoff's experiments on animals (of which the internal process of oxidation was diminished partly by section of the spinal cord, partly by poisoning with chloroform, alcohol, etc.) demonstrated that the tonic effect of spermine showed itself accurately in the cases where the intra-organic process of oxidation was diminished.

4. The therapeutic observations of more than fifty writers demonstrate that the dynamogenic effects of spermine show themselves in cases where the affection is due to a self-intoxication; for example, in anæmia, neurasthenia, scurvy, diabetes, cachexia, etc.

5. The analysis of the urine before and after subcutaneous injections of spermine shows that the coefficient of oxidation is exaggerated.

6. Experiments which have demonstrated the effect of spermine on the biological and chemical qualities of the choleraic vibrio prove that the process of reduction (the appearance of cholera red and the formation of ptomaines), due to choleraic bacilli, is suppressed in the presence of spermine.

These facts, says Dr. Pöhl, prove that spermine represents that substance in the organism which sustains the intra-organic process of oxidation, that which is known as intracellular respiration. The cellular changes give rise to incomplete products of oxidation (of regressive metamorphosis), of which the leucamines constitute the large part, according to Armand Gautier. Under normal conditions the leucamines undergo oxidation owing to spermine, and are partly burned, partly eliminated by the veins and the other excretories. But in abnormal conditions, when oxidation is imperfect, the leucamines accumulate and prevent the tissues from performing their functions in a normal manner. The first consequence of this diminution of oxidation would be self-intoxication, which is an efficient cause of a great variety of morbid conditions and a predisposing cause of the appearance of infectious diseases. Consequently, in normal oxidation (in the activity of spermine) lies the defense of the organism against self-intoxication. That is against a long list of maladies.

Spermine shows its catalytic effects only when it is in a soluble condition (*hydrate*), and not as a solid. In some cases spermine is transformed into an inactive substance, taking the form of an insoluble phosphate, of which the crystalline transformation has been known for a long time. This is the case of the phosphate of spermine. This transformation is rapid in the presence of the alkalinity of the blood, and is accelerated by the destruction of carbon and of oxygen in the organism, with the formation of phosphoric acid, spermine is transformed in these conditions into phosphate of spermine, which is insoluble in water. The transformation of spermine into phosphate of spermine is not a permanent one, and is reversed and converted into the alkalinity of the blood. In the case of the subcutaneous injections of active spermine soluble with the inorganic phosphate of the blood, the author, Armand Gautier, says: "The action of spermine is the same."

Our organism, says the author, certainly elaborates, in addition to spermine, other substances which are more or less active and have a catalytic action in the body, particularly in the presence of the blood. The quantity of the substance, however, is very small, probably because of the small amount in the presence of oxygen. In the case of the blood, it is

life is an incessant struggle against death, spermine is probably, for the tissues, one of the most efficacious agents in this resistance.

Variable Forms of Bacteria.—Though like produces like, the simpler forms of life take their own time and require suitable conditions to reappear in any one of a cycle of protean forms. Some instances of the ability of microbes to make use of their opportunities are given in a review of the morphology of bacteria by Dr. E. Klein in the *Quarterly Journal of Microscopical Science*. He states that bacteriologists now recognize that the shape under which a particular bacterial species presents itself depends both on the medium in which it grows and also on certain inherent qualities of the organism itself. The bacilli of human typhoid fever, swine erysipelas, or sewage are always cylindrical cells, but may grow either singly, in pairs, or in shorter or longer chains. The most common organism of putrefaction, the *Protus vulgaris* of Hauser, may assume nearly every form from spheres to spiral threads. *Bacillus prodigiosus* varies from spheres to cylinders. Not only do some species of bacteria appear under unstable shapes, but some which have a definite shape in a certain medium change their shape when growing in a different medium. The group of bacteria comprising the bacillus of the Middleborough pneumonia, of fowl cholera, of fowl enteritis, of *Freuenseuche*, of *Wild-seuche*, of swine fever, of grouse disease, the *Bacillus coli*, and others, have many points in common in their culture characteristics in the different media, and there is a close resemblance in the acute septicæmic infection which they are capable of producing in rodents, but, while some preserve the same definite shape when grown in one species of animals or one kind of medium, this shape changes in other animals or in other substances. The microbe of diphtheria, of tuberculosis, and of anthrax fever, under very favorable conditions of growth either in gelatin or in the human body, develop not only the typical forms, but also many long threads, sometimes branched, and generally with terminal segregations of protoplasm which may be vacuolated, conditions which are also found in the thrush and other mycelial fungi. Dr. Klein is certain that these are forms of active growth and not of involution. He concludes that, as these three microbes vary from the characteristics of desmotic forms, they must have well marked typical forms in less favorable media. Therefore, and thus they have the morphological characters of typical bacilli, but under other conditions they easily revert to or assume forms which show their evident relations to the saccharomyces or other mycelial fungi.

Classes of Infectious Diseases.—The widespread confusion between the terms infectious and communicable was illustrated in the popular belief that there is great personal danger in merely being near to patients who are suffering from cholera or from typhoid fever, but pointed out by W. H. Lusk, in the paper in the *Medical Record* of June 2d, 1890, on the subject of the "Cause of the Human Disease of Communicable Diseases." From the fact that the disease of cholera is not communicable, but is infectious, Lusk concludes that the term "infectious" should be applied to all diseases which are caused by the action of a specific microbe, whether or not the disease is communicable. He argues that the term "infectious" is more accurate than "communicable," and that it is more in accordance with the scientific method. He also points out that the term "infectious" is more in accordance with the scientific method, and that it is more in accordance with the scientific method. He also points out that the term "infectious" is more in accordance with the scientific method, and that it is more in accordance with the scientific method.

communicable diseases the communication is not by simple proximity, but by intermediate means. Therefore the isolation of the sick with them is neither needful nor effective when compared with measures directed against the intermediate means of communication, as in Asiatic cholera, typhoid fever, and tuberculosis. In the septic infectious diseases the infection gains entrance through a wound or damage by inflammation or otherwise of the skin or of a mucous membrane, as in the surgical infection wounds, erysipelas, tetanus, and hydrophobia. It is possible to prevent all infectious diseases by disinfective measures applicable to each, whether the illness is communicable, non-communicable, or septic.

The Probable Origin of the Red Blood-corpuscles.—The supply of red blood-corpuscles is apparently maintained from the nucleated red blood-cells of the bone marrow, the structure of which is described by Dr. Robert Muir and Dr. W. B. Drummond in the *Journal of Anatomy and Physiology*. In the marrow of man and other mammals the supporting stroma is very slender, and at the periphery it is arranged in one or two layers of connective-tissue corpuscles with fibrils between. From these layers delicate nucleated filaments press inward and are connected with the blood-vessels and fat cells. There are usually in the center of the marrow a single artery and a much larger vein. The branches of the artery terminate in what may be called arterial capillaries, and these empty into rather wide channels which may be termed venous capillaries, though they do not have a complete endothelial lining. The bulk of the bone marrow is composed of spherical, colorless, granulated marrow cells. There are also many nucleated cells containing hæmoglobin, which are larger than red blood-corpuscles, and are termed erythroblasts. Giant cells are found with a single lobulated nucleus appearing as many in one focus of the microscope. As the parenchyma is nearly cut off from the venous blood, the circulation through the marrow must be slow. Dr. W. H. Howell, of Johns Hopkins University, maintains that the marrow cells are embryonic cells whose function is to multiply by division and become nucleated red blood-cells. During their successive divisions the cells become smaller and pass from the type of the marrow cell to that of the nucleated red blood-corpuscle. But Dr. Muir considers that the marrow cells are of the leucocyte order. The red corpuscles found in the marrow substance have probably just lost their nuclei. Nucleated red corpuscles are not found in normal blood, but after severe hemorrhage in the human subject and in animals they may appear in the general circulation, in which case they stain more deeply with methyl blue than the ordinary red blood-corpuscle. Dr. Muir concludes that the nucleated red cells of the bone marrow are probably in free communication with the blood stream, but normally do not enter it, being retained in position by mutual cohesiveness, even after they have lost their nuclei. In this position they gradually acquire the physical properties of the adult red blood-corpuscles, and then pass into the flowing current. He reasons that after severe hemorrhage there occurs a dilution of the blood, in respect to the red corpuscles, and therefore the corpuscles are loosened in the vascular channels of the bone marrow where they are normally closely packed, and thus the normally stationary red cells may pass into the general circulation. The numbers of the blood in corpuscles may be looked upon as determining the stability of the cellular arrangement in the marrow. Poverty in blood-corpuscles may not only induce certain cells to enter the circulation, but also stimulate other cells to proliferate, as it is thoroughly well established that the multiplying cells become smaller and pass from the type of the marrow cell to that of the nucleated red blood cell, which so closely resembles the red blood corpuscle.

Lectures and Addresses.

LECTURES ON THE
DIAGNOSIS OF ABDOMINAL TUMORS.

BY WILLIAM OSLER, M. D.,

PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

LECTURE VI.—TUMORS OF THE KIDNEY.

(Concluded from page 69.)

CASE LXIII. *Pain in Left Side, with Development of Tumor, which gradually Disappears.*—Mrs. X., aged forty-six years, admitted to Ward C, October 23d, complaining of intermittent attacks of pain in the left side, and a swelling or lump which occurs at the same time.

The family history is good. She was always very strong as a girl; married at twenty-two; has had three children, the youngest now ten years old. Was never very large during her pregnancies. Has been always regular; has no uterine disease; still menstruates. Of late years she has had a good deal of mental worry and trouble, and has had a very busy life, actively engaged in housework.

The attacks of which she complains date as far back as eight or nine years ago, and consisted then of pain in the left side occurring once in one or two months, which was, however, quite bearable. It sometimes followed imprudence in diet, sometimes after a jolting ride. The worst attack, shortly after the trouble began, followed a day's journey on the railroad. The pains were never so severe as to require morphine, but there was a sensation of uneasiness and of discomfort and aching in the left side. Nearly four years ago she first noticed a swelling beneath the ribs on the left side. It was not large and usually only lasted a day or two. She can always tell for twenty-four hours before an attack comes on from curious full, heavy feelings all over her, and then the backache and dragging sensation in the left flank begin. Within the past year or so the attacks have been more frequent, and not a month has passed without them. The lump, too, has become more prominent during the attacks. Lately they have recurred as often as every week, and for the past month they have begun regularly on Sunday. She does not think that any special diet brings them on, nor has she noticed lately that exercise or jolting has any influence. The urine has been clear; she has not noticed any special difficulty, nor has she had any trouble in micturition. The bowels are sometimes constipated, and more particularly at the time of the attacks.

Patient is thin, weighs only one hundred and five pounds, and is pale. The following note was made at noon of October 22d. The abdomen is flat, not especially enlarged. On palpation it is everywhere soft until bow and the left costal margin, where a large tumor can be felt occupying the left side of the abdominal and projecting apparently from beneath the ribs. Anteriorly it extends into the umbilical and epigastric regions as far as the umbilicus. The tumor is gray, rounded and smooth, is easily pushed to the level of the anterior superior spine. At first it is somewhat painful from its situation in the enlarged and inflamed sigmoid flexure. It is made still more tender and painful by the pressure of the hand on the point above, and the same is true of the right side. It is readily pushed from under the ribs, and is not so tender on the point below. The tumor is not so tender on the right side as the left, indeed the point below is so soft towards the umbilical area. The tumor is pushed with the fingers to the navel, and is

ation given on deep pressure is of an elastic resistance. On percussion there is tympany over the mass in front; a flat tympany in the midaxillary line, and dullness behind. The right kidney is distinctly palpable and descends far enough on inspiration to be held down. For the first twenty hours in hospital patient passed only 380 c. c. of urine, clear, straw-colored; specific gravity, 1.006; slight trace of albumin; no sugar; a few leucocytes and flakes of epithelium.

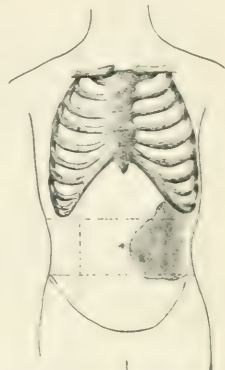


Fig. 11. Position of the center of mass of the LAM.

Patient menstruated from the 25th to the 28th. The tumor mass was present on the 25th; no examination was made on the 26th. On the 27th the tumor had disappeared entirely. The abdominal walls were so relaxed that palpation could be freely and thoroughly made.

The left kidney could be felt on deep palpation. It did not appear to be in any way enlarged; it felt, in fact, rather small and round. A daily note was then made on the patient and the urine carefully measured. The patient says she can always tell a day or so before the attack comes on by feeling dull and the onset of backache.

From October 28th to November 6th the daily note with reference to the left kidney was negative. It was felt every day. She seemed to be doing very well; gained in weight, and had not so much tenderness.

November 7th.—Last night patient had a heavy feeling in the abdomen after eating, and a little distress in the back, as if an attack might be coming on. This morning, however, she felt well again, got up, went to town on a street car, walked about a good deal. On her return after dinner the usual symptoms ushering in an attack appeared—slight headache and feeling of sluggishness, and a dull, gnawing ache in the left side, with a feeling of fullness. Patient expresses it that she is entirely "taken possession of by the occurrence," is listless, and if it comes on while she is up and about, her knees tremble under her and she feels that she must lie down. She never, however, is nauseated or sick at the stomach.

An examination was made at 11.30 A. M. on the 6th, and the following note dictated: "On drawing a deep breath the left kidney feels a little larger and more prominent than previously, but is not tender." To-day (7th) the examination was made at 1 P. M. The abdomen is greatly distended. The left side more prominent than the right. The tumor mass previously described is now more prominent, and extends more anteriorly almost to the level of the umbilicus. The anterior border is hard, somewhat abruptly defined, and a depression can be felt along the margin. On deep inspiration the mass descends, the lower end almost reaching the anterior superior spine. During the deepest inspiration the fingers can be passed below the level of the tenth rib. From behind, the posterolateral surface of the tumor is somewhat irregular. With the

It is firm, rounded, readily palpable between the two hands, and is still large enough to be made to project beneath the skin when lifted from behind. She says she has not nearly so much uneasiness and distress in the side to-day.

9th.—The mass is smaller than yesterday. She has now no pain.

10th.—The tumor has disappeared. The left kidney is readily palpated; feels smaller than the right. A careful estimate was made of the quantity of the urine each day, and the total solids, the reaction, and the specific gravity. From the 28th of October to the 7th of November, during which time there was no tumor, the amount of urine ranged from 1,000 to 1,900 c.c. For the twenty-four hours ending November 7th the amount was 1,900 c.c. On the 8th there was only 1,100 c.c.; on the 9th, 820 c.c.; on the 10th, 1,200 c.c.; on the 11th, 1,210 c.c.; on the 12th, 980 c.c. The urine has always been clear, is usually acid; the specific gravity ranges from 1.010 to 1.017; generally yellow, straw-colored, and contains a few leucocytes. There was no special change in its appearance or microscopical characters, either on the 7th, 8th, or 9th, when the tumor was present, or the 10th, 11th, and 12th, after it had disappeared. The patient went to her home on the 11th. She had subsequently kept account of the amount of urine, which has ranged from two and a half to five pints daily. She had an attack in which the tumor was present on the 17th and 18th, on which days she passed two and a half and three pints of urine, and on the 19th, 20th, and 21st there were only two, three, and three pints. On December 1st and 2d there was again an attack with the tumor present. The amount of urine was three pints on both days, and on the 3d, 4th, and 5th it was three, three, and five pints.

December 16th.—This patient was seen last to-day. She has been better in many ways, but for the past week has not been feeling at all strong, and has been very nervous. The tumor has been present, she states, for about two days. On examination the tumor mass was distinct, though small in comparison with the previous notes. It extended as far forward as the parasternal line, and could be readily moved on bimanual palpation. On deep inspiration the fingers could be pressed *under* it, and it could be held down. It was distinctly lobulated. In the anterior axillary line it felt superficial, and it could be made to bulge beneath the skin.

A carefully adapted pad and bandage have given much relief, and the attacks have not occurred so frequently. She has also gained in weight and is in every way better.

January 3d, February 7, 1897.—She has been very much better since last note, and has only had three attacks; one being somewhat severe. In all three the tumor mass, however, was present. There has been no attack for four weeks. The onset is sometimes in which she has had for months. Her appetite is good, and she now weighs one hundred and twenty-five pounds.

These cases have the following points in common: The patients have no other children; there have been attacks of colic-like pain in the left side, during which tumor developed, to disappear in the course of a few days, sometimes with an increase in the amount of urine. The symptoms assume particular form. There is no other condition in which a tumor in the flank appears and disappears at this rate. Unmistakable hydronephrosis, or a small brown, somewhat lobulated, firm, movable form of fibrous tumor, to be cut out, and the wall of the abdomen occupied over a large area immediately posterior to the bandage, and which may become prominent when pressed forward,

to lift the skin of the abdomen in the region of the navel, and to-morrow you may be completely nonplussed to find that the tumor has disappeared, leaving not a trace behind. There are remarkable cases in which this history repeats itself throughout a series of years, as in the case of congenital hydronephrosis to which I referred—a young man, aged twenty-one years, who had had from his second year the intermittent development of an enormous abdominal tumor which disappeared with the passage of a large quantity of urine.

The subject is one to which much attention has been given of late, and you will find in the monograph of Landau, and in the works of Morris and Newman, excellent descriptions of intermittent hydronephrosis. The whole question has been most thoroughly considered in the monograph which I here show you,* in which the authors have collected from the literature seventy cases. I see that there has been published recently in London a brochure on the subject by Knight, which has not yet reached me.

A large proportion of all the cases are in women, who are the subject of it at least four times more frequently than men, in about the same proportion as they are more liable to movable kidney. The left side is more frequently affected than the right. Of forty-nine cases in the list of Terrier and Baudouin available for analysis on this point, thirty were on the left side and nineteen on the right.

The general symptoms of intermittent hydronephrosis you have gathered from the report of the cases. In the intervals the patient may feel perfectly well, or may have only the mental worry consequent upon the uncertainty of the nature of the trouble. From this cause Case LXIII lost rapidly in flesh. Case LXI suffers much with the nervous features so often associated with enteroptosis. As a rule, and this is an important point in the diagnosis, the health is good, and the patients are very comfortable, experiencing only, perhaps, a sense of weight or dragging in the side, more rarely local or radiating pains. The examination of the side may be negative; more commonly there is a movable kidney, sometimes feeling quite normal, but it may feel small, as in Case LXIII, or swollen, large and tender. There are instances also in which a sac may be felt, presenting indurated areas, or it may be partly filled. The urine is clear and presents usually no abnormal ingredients; in some cases there is a slight turbidity from pyelitis.

You will have noticed in the reports that the attacks recur with variable frequency. Among the circumstances liable to cause them are sudden and violent exercise, the jarring and jolting of riding and driving, any fatigue, mental emotions, and errors in diet. In Case LXIII the patient assured us that she could at any time bring on an attack by a ride in a jolting street car. It is important to bear in mind that indiscretions in eating may cause them. The patient of Dr. Palmer Howard's could at any time bring on a severe renal crisis by taking a heavy supper and a bottle of Bass's ale. The onset is usually manifest to

* *De hydronephrosis intermittente*, par Terrier et Marcel Baudouin. Paris, 1897.

the patient by pain and uneasiness in the affected side and general restlessness. In Case LXIII the patient knew at once when the tumor was developing by the gnawing ache in the left side, the slight headache, and the feeling of sluggishness. The attack may have the severity of nephritic colic and require morphine for its relief. There is rarely fever, nor do I see any cases reported with recurring chills, the absence of which is somewhat remarkable, considering their frequency in affections of the pelvis of the kidney. Nausea, vomiting, diarrhœa, and distention of the abdomen may be present. The attack may last from a few hours to the greater part of a day; the pain gradually passes away, and the patient feels only a soreness and heaviness in the side. The tumor gradually develops during the attack, and may increase in size for several days after the intensity of the pain has subsided. The three patients who have been under observation had learned to recognize the tumor, and knew at once when it was present. In the frequent examinations which I have made of Cases LXII and LXIII I never found them in error on this point.

The tumor itself offers no characters which would call attention to the existence of intermittent hydronephrosis. It has the situation and relations of a kidney tumor, with perhaps a greater mobility than usually met with in neoplasms or pyonephrosis. When small, it may be very mobile, and some have detected a difference between the renal and the pelvic portions of the sac, separated by a groove. It is deeply placed, rounded, and from behind can be lifted forward from its bed. The median and lower surfaces are smooth, sometimes irregular, but there is no sharp margin or rounded edge. Pressure is often painful, and causes at times an urgent desire to urinate. Fluctuation is rarely obtained, but there is often a sense of elastic resistance. The colon, small bowel, and part of the stomach usually lie in front of the tumor and mask the percussion in the outer half of the umbilical region or in part of the flank.

During the existence of the tumor the amount of urine passed is, as a rule, greatly diminished. After persisting for a variable time the tumor may disappear suddenly with the greatest relief to the patient, and when the evacuation is rapid there is always a notable increase in the quantity of urine. In not one of the three cases which we have considered was the discharge large, as in some instances which are on record, but the disappearance of the tumor was gradual, and the increase in the amount of urine, though noted in two of them, was not striking.

With the disappearance of the tumor the patient again becomes quite comfortable, and may remain so for weeks or even months without a recurrence of the attack.

The recognition of the condition, when fully established, is comparatively easy. The pain, the development of a tumor in the flank, its disappearance usually with no reaction in the amount of urine, form a convincing group sufficiently characteristic. If only no pains are caused by the tumor, always the same. Some of the cases of kidney-tumors, and, in particular, the large ones, have presented the same. Foster and Baileys divide the case of a patient with sufficient hydrophobia into three, and the second of these

obscure or ill-determined, the cases due to lesion of the bladder or of the parts in the vicinity of the lower end of the ureter, and the cases associated with displaced or movable kidney, and due to lesions in the upper extremity of the ureter. In the first group there are a certain number of cases in which the intermittent hydronephrosis is due to calculus. There are instances also caused by blood clots, by tuberculous lesions, and by spasm of the ureter. In the second group of cases the lesion of the bladder is most commonly tumor, with infiltration of the wall near the orifice of the ureter, and by lesions of the uterus and vagina, particularly cancer.

The important rôle in intermittent hydronephrosis is unquestionably movable kidney, the association with which has been recognized since the publication of Landau's monograph in 1881. You will find in the work of Terrier and Baudouin the records of the autopsies which have been made, and of the examinations of the kidneys which have been removed by operation, and I show you here several of the figures which illustrate the marked kinking at the upper part of the ureter. In other instances the ureter has penetrated the pelvis at a very acute angle; and in other cases, again, there appears to have been a positive flexion or twist. It is not difficult to understand how, in the displacement of the organ, such a flexion or kinking could occur, and the wonder, indeed, is that it does not occur more commonly.

You will naturally ask, What becomes of these cases? It is quite possible that the condition may be transient, even when associated with movable kidney. The careful adaptation of a bandage and pad may give great relief, as in Case LXIII; also in Case LXII to a less degree. When the attacks are severe and the tumor recurs with frequency, nephrorrhaphy should be urged. The chief dangers are the conversion of an intermittent into a permanent hydro-nephrosis, and the infection of the sac with pyogenic organisms—conditions which demand operative interference. It is interesting to note, however, the prolonged period during which the contents of the sac remain clear. In the congenital case of twenty years' duration, to which I have so frequently referred, the secretion of the affected kidney—dated to a shock, but still containing renal tissue—was only a little turbid.

III. MALIGNANT DISEASE. Of the cases which came before me for diagnosis, two were in children under the age of ten.

[illegible]

"The kidney tumor is, as a rule, associated with changes in the condition of the urine. Blood is present, either as free hæmaturia, or the constant presence of a small number of red blood-corpuscles. There may be large clots, the passage of which causes great pain. In some cases molds in blood of the pelvis of the kidney and of the ureters are passed, though this is not so common in children as in adults. Other conditions which have to be differentiated are ovarian tumors, pyonephrosis, and cysts, but in cases of doubt the exploratory operation should be strongly urged."

The tumor in this case was removed by Dr. Halsted and found to be an enormous sarcoma of the kidney. The operation was not at all difficult, the child made an uninterrupted recovery, and when last heard of, a month or two ago, remained well.

CASE LXVI. Large Tumor in the Left Side of the Abdomen; Recurring Hematuria.—November 2, 1893. I saw today, with Dr. Lillian Welch, Mrs. X., aged sixty-three years, who had for many months a progressively enlarging tumor of the abdomen with hæmaturia. Until within the present year she has always been a very healthy woman. She has been gradually failing in strength, and within the past six months has lost a great deal in weight, and lately the emaciation has become very great. On several occasions during the past four months she has passed bloody urine, and only at these times has she had any pain.

The patient is a small framed, much emaciated woman. The abdomen is distended particularly on the left side, which is occupied in its whole extent by a large, solid tumor. The tumor extends beyond the middle line, and reaches below the anterior superior spine. It is firm, but with bin manual palpation it can be moved slightly from side to side. The right surface and lower border present large irregularities. It is everywhere on percussion except at the right border. The glands are not enlarged; the superficial veins are only slightly prominent; the examination of the other organs is negative. The urine at the time of my examination was clear. At intervals, however, she has passed considerable quantities of blood, and on these occasions there has been a good deal of pain. Considering the solid nature of the growth, the occurrence of hæmaturia, and the rapid emaciation, the diagnosis of tumor of the kidney is the most probable. The urine is quite clear, and it was not deemed advisable to put her to the pain of an exploratory operation, which, in this condition, seems favorable for an exploratory operation.

The patient died a few weeks after my visit, and Dr. Welch tells me that the post mortem showed an enormous new growth in the kidney, with small secondary nodules in the liver.

There are two points which you must ever bear in mind in the diagnosis of large tumors in the flank, first, the importance of thorough and systematic examination of the urine with a view of determining the presence of pus, tubercle bacilli, or blood; and, secondly, the use of the aspirator needle. The condition which is really most apt to cause error is the progressively enlarging kidney of pyonephrosis. General medical records indicate how frequently the tumor leads to error, but the chances are reduced to a minimum if attention be paid to the two points I have just mentioned. Catheterization of the ureters may give information of the greatest value.

IV. TUBERCULOSIS.—A large kidney tumor is rarely due to tuberculosis of the substance of the organ, but tuberculous pyelitis may lead to considerable enlargement of the pelvis and calices, and a certain number of all cases of pyonephrosis have this origin. The tuberculous kidney, however, rarely forms a large abdominal tumor. The following case illustrates two important features in the diagnosis of renal tuberculosis; namely, the determination, by catheterization of the ureters, that the pus came altogether from one side, and the detection of tubercle bacilli in the urinary sediment.

CASE LXVI. Cough for Five Years; Pulmonary Tuberculosis; Enlargement of the Right Kidney; Pyonephrosis; Tubercle Bacilli in Urine.—Susan S., aged sixty-three years, admitted June 4, 1893, complaining of pain in the abdomen. The patient was under observation for a few days in September, 1890, when she had slight cough, and pus and albumin in the urine, but no tubercle bacilli were found at that time.

The patient's mother died of tuberculosis. She has had five children, all living and well. She had pneumonia when thirty-five years of age. For five years at least she has had cough, with slight expectoration, and she has had at times severe chills, which have been supposed to be due to malaria.

Lately she has had a great deal of pain and uneasiness in the abdomen, and has been under treatment for cystitis, though she has had no special pain in passing water.

Present Condition.—Moderate emaciation; marked patchy pigmentation on the face, slight anæmia; no fever; pulse, 90, of fair volume. At the left apex the percussion is a little higher in pitch, and there are piping and moist sounds in the first and second spaces. The sputum is mucopurulent, with yellowish lumps, and in these a few tubercle bacilli are found; no elastic tissue.

The heart sounds are clear.

The abdomen is flat, soft, no pain on pressure. The right kidney feels two or three times as large as a normal organ. On deepest inspiration it does not come down far enough for the fingers to be placed above it. No cord-like mass to be felt in the course of the right ureter. The left kidney is not palpable. The urine is turbid, light yellow in color, specific gravity from 1.007 to 1.010, and on settling deposits a creamy pus. There is a trace of albumin, and one or two granular casts are found. Many examinations were made for tubercle bacilli. At first none were found, but subsequently they were found after centrifuging the urine, and once in considerable numbers.

On July 12th, under chloroform anesthesia, Dr. Kelly catheterized the ureters. From the left ureter about fifteen drops flowed; from the right, a yellow-brown pus, in which tubercle bacilli were detected. The patient had very slight fever, no chill while in hospital, and appetite and general condition improved very much.

There are two points in the diagnosis of tuberculous pyelonephritis which are well illustrated by this case. The condition is very frequently mistaken for cystitis, and in men more frequently than in women there is great frequency in micturition and great irritability of the bladder, for which on more than one occasion I have known a perineal section to be performed. The urine, however, is a rule acid in tuberculous pyelonephritis, and in this case, unless there is extensive coexisting stricture of the ureters. The other point is the association of hæmaturia. You will have noticed in the history that this patient was supposed

to have malarial disease on account of the severe chills which occurred at intervals during the past five years. They may form a very special feature in the disease, as was pointed out many years ago by Owen-Rees, and it is to be remembered that the chills may occur with a very slight amount of pus in the urine.

One of the most important advances in the diagnosis of renal affections has been the facility with which of late surgeons have practiced catheterism of the ureters. Such a demonstration as we had in this case by Dr. Kelly—the catheters in position in both ureters at once, from the right of which a turbid, purulent urine flowed out, from the left a perfectly clear—illustrates the remarkable technique which has been developed by specialists. The demonstrations which many of you have seen in the genito-urinary department by Dr. James Brown prove that catheterism of the male ureters, though not so easy, may be performed with readiness, and gives information of the greatest value as to which kidney is involved.

In the series of cases which we have studied together you have had many illustrations of how far the reasonable probability of Bishop Butler will carry the clinical physician in his endeavors to determine the nature of an abdominal tumor. You will have noticed in how many cases the surgeon made it a certainty, not, unhappily, in diagnosis only, but also in prognosis. But desperate cases require desperate remedies, and in no single instance were the chances of a patient damaged by the exploratory incision.

Amid many pleasant memories of Berlin, just twenty years ago this session, none recur more persistently than those associated with that true Asclepiad, Ludwig Traube, who, adding *probitas* to learning, sagacity, and humanity, reached the full stature of the Hippocratican physician. When acknowledging some error he would say—often in a soft, meditative manner, as if gently reproaching himself—Have we carefully observed all the facts of the case? Yes. Did the art permit of a judgment on the facts under consideration? Yes. Did we reason correctly upon the data before us? No. *Wir haben nicht richtig gedacht.* And with these significant words—may they long echo in your ears!—let us close the exercises of the session.

Original Communications.

MYXEDEMA.

WITH UNUSUAL RARE RELATIONS.

By J. W. WESSINGER, M.D.

OF THE UNIVERSITY OF MICHIGAN.

For many years the patient has been afflicted with myxedema, and has had several attacks of thyroiditis. She has been treated with iodine, and has been kept on a low diet. The patient was first seen on March 13th, 1894. At that date she was in a state of extreme emaciation. The following are the symptoms:

1. Heart failure, the patient has been unable to walk for several months, and is now confined to bed.

heart impulse feeble, but regular. Patient presents a marked bulky appearance, general puffiness of all the tissues, but no true edema. Voice husky and very weak; face markedly flushed; eyebrows heavily arched; lips very thick and immobile; loss of hair quite marked; the face appears masked; the tongue is large and flabby, and the fingers are club-shaped. Tonsils hypertrophied. Urine scant; specific gravity, 1.025, acid; no albumin or sugar; oxalates abundant. Extreme prostration; patient unable to walk alone. Bowels constipated. Appetite small. Respirations, thirty per minute. No hereditary predisposition. Patient gives a history of thyroid enlargement, with subsequent atrophy. She is very slow in apprehension, thought, and action, and is very clumsy. On March 12th the following measurements were taken: Height, four feet ten inches; weight, one hundred and eighty pounds; circumference of neck, fourteen inches; right wrist, seven inches; left wrist, six inches and a half; right hand, eight inches; left hand, seven inches and three quarters. Patient is affectionate toward her family, and yet lives in constant fear lest she do them bodily harm. She seems to have a morbid impulse to inflict injury. The disposition is melancholic. Present illness began five years ago. The treatment advised for the patient was as follows:

R Cinchonidine sulphate..... gr. j;
Iron by hydrogen..... gr. jss.;
Ipecac..... gr. ʒ;
Arsenious acid..... ʒss.;
Strychnine sulphate..... ʒss.

M. In tablet. Sig.: One three times a day.

Dessicated thyroid powder (P., D. & Co.), five grains in capsule with each meal.

At the end of the third day of treatment the patient's temperature rose to 101°, with quite marked stomacheal disturbance. She was then limited to one capsule a day. After two or three days, when the reaction had subsided, she was again ordered to resume the three capsules a day, without further disturbance.



Fig. 1. March 13th, at the beginning of treatment.

Photograph No. 1 was taken on March 13th, and gives a fair illustration of the patient's appearance at the beginning of treatment.

Photograph No. 2 was taken on April 29th. On this date the patient's weight was one hundred and sixty-five pounds. Measurements as follows: Neck, thirteen inches; left wrist, six inches; right wrist, six inches and a half; left hand, seven



FIG. 2. SIX WEEKS AFTER BEGINNING OF TREATMENT.

inches and a half; right hand, eight inches. Temperature 98.5°; pulse, 80. The patient is active and cheerful, does all her housework, and is also doing some gardening. By contrasting these two illustrations, the improvement of the patient will, I think, be quite apparent. From an almost helpless condition in which we found the patient at the beginning of the treatment the improvement was so marked that on April 9th she was able to walk to my office, a distance of a mile and a half, without assistance.

It no doubt would be of interest to all present, had we the time, to make a complete study of the work of the various authors whose labors have brought the treatment of this peculiar condition to its present state of perfection. To know, when a certain part or structure of the human body becomes diseased and atrophied and its function lost, that such function can again be restored through the administration of such part or structure in its normal state seems like an innovation indeed, and yet, at least so far as the thyroid gland is concerned, such is a fact of modern medicine. The author will not make the proposition that because disease resulting from the functional loss of a certain gland can be successfully treated by supplying that gland substance in its normal state, therefore all gland diseases can be met by a like procedure; and yet, in the light of recent research, such a consummation is not impossible. By way of illustration: When we see men like Robert Abbe, of New York, successfully sever the roots of a lower animal and reanimate it by means of a stretched glass tube, and exhibit the animal four months later, well and healthy, with a glass tube in its nostril, when we see the same observer amputating a limb complete, save its stump,

and then reunite it to the body, bone, and sinew— dare we hope, in the light of this research, that the time is not far distant when the surgeon will amputate a diseased or injured limb and cause some worthless criminal to yield a sound one in its place? Finney,² of Johns Hopkins Hospital, successfully sutured two fingers in place seven hours after they had been cut off. At the end of three years motion and sensation were complete. If all this becomes possible in surgery, equally great achievements are not impossible in medicine. We owe the term myxœdema to Dr. Ord, of England, who gave it this name because he believed the swelling and tumefaction of the tissues to be due to an excess of mucin.[†] It has been demonstrated, however, that excess of mucin is by no means a constant accompaniment of the disease. The successful treatment of myxœdema has been gradually evolved out of the arduous and patient labors of Dr. Ord, Professor Horsley, Dr. Semon, Dr. Kocher, and Professor Schiff. Suggestions coming from Brown-Séquard in regard to the use of certain animal extracts no doubt also aided in this line of research. But to Dr. Murray, of Newcastle, must be ascribed the honor of being the first to prove the success of the thyroid treatment in myxœdema. In his study of this disease Dr. Ord was the first to call attention to the invariable presence of thyroid atrophy. Dr. Semon, taking up the train of symptoms observed by Dr. Kocher to follow complete thyroidectomy, brought the matter prominently forward in England and by indefatigable energy was enabled to collect a vast amount of evidence tending to prove the identity of the cachexia thus resulting and myxœdema. Professor Horsley, by numerous experiments on the lower animals, showed the close resemblance of the resulting dyscrasia to human myxœdema. Professor Schiff proved that by first transplanting a thyroid gland to the animal, that then its own thyroid could be removed without any resulting dyscrasia. Professor Horsley followed this observation with the suggestion that myxœdema might be successfully treated by thyroid transplantation in the human subject. He drew this conclusion because the sum of all the evidence now brought to bear proved beyond a doubt that myxœdema is caused by a functionally inactive thyroid gland. Thyroid transplantation was practiced, but it was soon found that the implanted gland was rapidly absorbed, and as a result the treatment had only temporary value. The rather curious observation had also been made that the disease remained stationary while the subject was in the pregnant state. This may go to prove that the fetal thyroid supplies temporarily the place of the functionally inactive maternal thyroid. It was his familiarity with these observations that led Dr. Murray to priority in the successful injection of thyroid extract. This method of treatment was successful, but difficult arose because it became very essential, yet at the same time difficult, to secure a thoroughly aseptic solution. This method was finally abandoned and for a time resort was had to raw thyroid feeding, and then in turn the glycerine was the substituted thyroid

² Johns Hopkins Hospital Bulletin.

[†] LANCET, 1870, W. O. M. 400, 401, 402, 403.

powder, which, given in capsule, certainly embodies all that modern medicine could desire in the successful treatment of myxœdema. While the success of this mode of treatment has been quite conclusively demonstrated, do we know upon what principle or agent these results depend? Has the veil of empiricism been lifted and the treatment placed upon a truly scientific basis? Very recent investigations* enable us to affirm these inquiries. It had always been thought by investigators that the active agent in the thyroid must be a ferment of some form. Since digestion has no power to change the remedy when administered, it was thought the active agent might be peptone; but after numerous experiments it was found that the thyroid gland does not contain peptone, also that it does not contain the proteoses, and does not secrete mucin. It has been proved, however, by at least two reliable methods† that nucleo-albumin is obtainable from the thyroid. But this substance can also be obtained from the very many organs composed chiefly of cells. There is this difference, however, that while nucleo-albumin as usually obtained comes from the cells lining the acini, "in the thyroid it is obtained from the colloid contents of the acini." This has been proved beyond a doubt by Lilienfeld and Monti's micro-chemical method. Now, then, we find the invariable absence of this nucleo-albumin when the thyroid undergoes atrophy with the resulting cachexia. It is therefore probable that the nucleo-albumin is the active principle which, when administered, cures the disease, and when absent from the system myxœdema results. It is not known as yet whether thyroid nuclein differs essentially from the other nucleins or not. Neither do we know whether the benefit comes from nucleo-albumin as such, or whether it is first split up and the nuclein set free to act by itself. If these two problems can be solved in the affirmative, then myxœdema and the allied cachexias are just as amenable to nuclein as to thyroid treatment.

The author takes pleasure in acknowledging the kindness of Mr. J. H. Frost, Ph. C., of the senior medical class of the University of Michigan, for the photographic work pertaining to this paper.

THE PRODUCTION OF DISEASES BY SEWER AIR.

By A. JACOBI, M. D.,

The composition of sewer air is at least as variable as that of sea air. According to Henry R. Kennell (*Public Health Laboratory Week*, Philadelphia, 1890, p. 103) it is neither generally alkaline, nor generally extremely acid, but rather in the vicinity of the average of the normal atmosphere. It is sometimes in normal proportions, carbonic acid is partially removed from the same source. It gives

ably does not average more than twice the normal amount. Ammonia, sulphureted hydrogen, ammonium sulphide, and carbon bisulphide are present in small quantities. Marsh gas is small in amount or absent. The fatid and putrid organic vapors of sewage are, according to Odling, allied to the compound ammonias, and are probably carbo-ammoniacal, and contain traces of ptomaines and leucomaines (i. e., animal alkaloids). Molds, fungi, and bacteria (chiefly bacilli) and their spores, together with animal and vegetable débris, appear to constitute almost the entire suspended matter. Micro-organisms average about six per litre in the air of a good sewerage system.

The atmospheric air always contains bacteria, mostly, it is true, dead, and mineral parts. The presence of pathogenic germs has been denied; but there *must* be some in the air, and living ones too, for contagion, unless it result from immediate physical contact of the sick and the well, must take place through the air. Tubercle bacilli are found on the walls of rooms; before they enter the lungs of inmates, they must be carried through the air with other dust. It is true, they have been found there but rarely; but von Eiselsberg claims to have seen *Streptococcus erysipelatos* (Langenbeck's *Archiv*, vol. xxxv, 1886) and Pawlowsky *Pneumococcus Friedlander* (*Berl. klin. Woch.*, No. 22, 1885). Indeed, the general statement of Tyndall, not contradicted, always reaffirmed (*Essays on Floating Matter of the Air*, New York, 1882), that the apparently purest air contains dust with micro-organisms, makes the frequent presence of pathogenic organisms at least probable.

But the atmosphere is certainly no favorable medium. Germs are heavy and fall to the ground; thus it is not unreasonable to believe, but it can not be proved, that a walking child of two feet in height may inhale them more readily than an adult whose respiratory inlet is more than five above the surface. The dryness and light of the sun destroy them; even micrococci die in sunlight in a few hours (Duclaux, *Microbes et maladies*, p. 34). It is only when locked up that spores were found normal after many (twenty-five) years. Koch retained virulence in his tubercle bacilli five or seven days in diffused light, but only a few minutes or at most hours under sun rays.*

Indeed, pathogenic bacteria have a hard time of it. They live in high temperatures only, and die soon in a low one; they are readily destroyed in water containing saprophytes or any other non-pathogenic bacteria. In the thoroughly soiled water of the River Seine, at Paris, which holds no oxygen, there are no pathogenic bacteria; while a few miles farther down, near Meudon, the Seine contains again both oxygen and pathogenic bacteria. Hence, sewage is not a promising place for them to thrive or live in. Great dilution destroys them or renders them innocuous. For two thousand years Rome has emptied all its feces and other refuse into the Tiber, and no impurities of a dangerous character were detected by Celli and Scda a few miles below the city.

* *Quart. J. Med.*, 1890, p. 103.
† *Quart. J. Med.*, 1890, p. 103.
* *Quart. J. Med.*, 1890, p. 103.
* *Quart. J. Med.*, 1890, p. 103.

* The statement occasionally made that *Vibrio cholerae*, plasmodia, erysipelas cocci, also tubercle and typhoid bacilli, and vibrio cholera may undergo multiplication in the air, lacks confirmation.

Now, what is valid for air outside a sewer is so for that inside it, with this difference, that there are more germs found in the atmosphere than in sewer air. Billings states emphatically that there are fewer micro-organisms in the air of sewers than in that of the streets. He quotes Carnelly and Haldane (*Proceedings of the Royal Society, London, 1847, p. 51*), who report that the London and Dundee sewers contain twice as much carbonic acid, three times as much organic matter as outside air, and fewer micro-organisms, and remarks that this air in the sewers is better than in naturally or even mechanically ventilated schools. It is only when there is splashing in the sewers that (temporarily) there can be more organisms in their air. Otherwise moist surfaces do not give them off. It is only under favorable circumstances that they can be carried off and upward into the houses and escape through ventilating shafts. Into living rooms they could escape only either where there are no traps, or where the traps are empty either from disuse or from being sucked out or from upward pressure. In this way, Billings suggests, pyogenic organisms and Fehleisen's coccus appear to be conveyed through house drains.* At all events the opportunity for microbes to get out of the dwellings is greater than to get into them. When they get into the drains from inside, they are flushed out. It is evident, however, that the flushing out of substances entering the sinks from inside depends on the structure and size of the drain, the nature of the trap, and the amount of the water poured through it, also on the use or non-use of disinfectants employed in the households.†

Less rainfall, and consequently less flushing of sewers, gives rise to accumulation of more filth. Badly constructed brick sewers have the same result. Outfall sewers terminating below water are apt to be choked. Thus, while Russell's analysis yielded a fair standard of purity of sewer air, Parent Duchatelet found only 13.79 per cent. of oxygen and 2.09 per cent. of sulphureted hydrogen. Thus gas is undoubtedly developed to a great extent, bubbles are constantly breaking on the surface (Frankland on The Transport of Solid and Liquid Particles in Sewer Gases, *Proceedings of the Royal Society, April, 1877*), and may enter houses through untrapped drains whenever they are not prevented to leave the main sewer otherwise.

Under these circumstances, as the specific germs of in-

fectious diseases may be contained in the liquid disseminated by the bursting of bubbles, sewer air may certainly become specifically infected. Some of the germs may find a favorable medium in the organic material, the ammonia and the phosphates of sewage, while others are more liable to be destroyed by the saprophytes of putrefaction. As to typhoid, the cases are very numerous. In regard to cholera Parkes refers to its introduction into Southampton in 1866, where it was probably due, in his opinion, to the passing of pumped sewage, infected with cholera evacuations, in a frothy and agitated condition along an open conduit. He adds the remark that, as soon as the latter was covered over, the epidemic (or rather endemic) abated. The latter remark is suggestive. A sewer disconnected from houses by good traps is no longer an open conduit; and it appears that *unless sewer air is forced upward*, no amount of cholera bacilli or toxin will annoy the population of houses properly secured by traps and by ventilating shafts both in the houses and in the streets.

But granted that sewers are infested with bacteria, how do they get into the air of sewers, of streets, of houses?

Mr. J. B. Berkart (*British Medical Journal, November 25, 1893*) claims that, in the usual conditions in which defective drainage is supposed to exert its baneful influence, it is impossible that pathogenic micro-organisms which may exist in an untrapped pipe or in a cesspool can escape into the air. The force of evaporation is not enough to lift from a moist surface an organism, however small it may be; and even powerful ascending currents of air can not convey from a dry and porous soil, much less from a cesspool, any germs. Consequently, from untrapped pipes and cesspools nothing but irritant and toxic gases can escape.

He experimented through six or eight hours with currents of air at a velocity of from twenty-two to forty-five miles an hour. They did not lift into the atmosphere a micro-organism from a putrid solution of extract of meat of not more than a half per cent., or from putrid urine, and were unable to detach a micro-organism from any such putrid solution as may have been allowed to dry on the inside of a glass vessel at 60° or 70° cent.

The question whether and which diseases can be produced by the exhalation of sewer air has engaged the fears of a great many and the attention of a number of observers. A recent contribution to the literature of the subject is that of H. Hux (Medical News, August 10, 1894). He admits the absence of proof of indirect infection by sewer gas, but has the MIND of several common and diseases attributed to it. Anorexia, constipation, vomiting, diarrhoea, and other vague are frequent, justifying, therefore, the common knowledge of some children, women, and men, against sewer, dirt, and other foulness, and, that, however, though it is a question of every day with physicians, and neither of their every profession. In a patient of Hux's who was somewhat fully, but of fairly thick blood, however, after two years, the patient was of the spleen, and, afterwards, the patient the diarrhoea and blood in person exposed to the risk of sewer air, and, in consequence, it will be noted, however, that

* The possibility of direct transmission of disease from the sewer to the house through the drain is a possibility which has been suggested by some writers. The gas pressure in the sewer is not sufficient to force the gas into the house, and the gas pressure in the house is not sufficient to force the gas into the sewer.

† The possibility of direct transmission of disease from the sewer to the house through the drain is a possibility which has been suggested by some writers. The gas pressure in the sewer is not sufficient to force the gas into the house, and the gas pressure in the house is not sufficient to force the gas into the sewer.

‡ The possibility of direct transmission of disease from the sewer to the house through the drain is a possibility which has been suggested by some writers. The gas pressure in the sewer is not sufficient to force the gas into the house, and the gas pressure in the house is not sufficient to force the gas into the sewer. The possibility of direct transmission of disease from the sewer to the house through the drain is a possibility which has been suggested by some writers. The gas pressure in the sewer is not sufficient to force the gas into the house, and the gas pressure in the house is not sufficient to force the gas into the sewer. The possibility of direct transmission of disease from the sewer to the house through the drain is a possibility which has been suggested by some writers. The gas pressure in the sewer is not sufficient to force the gas into the house, and the gas pressure in the house is not sufficient to force the gas into the sewer.

among all these cases there is not one which can be traced with the knowledge we now possess to a specific germ.

Mark Style (*Lancet*, October 19, 1889) attributes cases of acute pemphigus to the inhalation of sewer gas. Two children of five and of two years lost color and felt drowsy for a fortnight, then developed blebs on feet and shins; new attacks occurred on other parts of the body (no erythema with it). There were fever and anorexia. The sewers were found to be badly constructed and leaky; when they were mended the children improved.

Hæmoglobinuria in a child of eight years, "probably due to the inhalation of sewer air," was observed by Gordon Sharp and William Summerskill (*Lancet*, December 9, 1893). The girl lived in comfortable circumstances, was previously in good health, fell sick with dyspnoea, puffy appearance, and frequent micturition, which resulted, however, in six ounces daily only of a chocolate-brown urine the sediment of which rose to the top. Guaiacol and ozonic ether gave the characteristic blue color. There were no casts, only a trace of albumin, but few blood cells, much amorphous hæmoglobin. Convalescence began in three days, hæmoglobin disappeared after the fourth day, and anæmia remained behind. In the dwelling the water-closet pipes had been leaking, and the smell had been disagreeable. The pipes were being changed, and the smell was worse when the attack came.

It appears, in the opinion of the authors, that sewer air affects young children quite rapidly, and noxious vapors are known to produce hæmoglobinuria, but it is claimed that no previous case like the above is known.

In the experience of Dr. A. H. Smith, the president of the Climatological Society, in 1881, a large number of the attendants in St. Luke's Hospital, New York, were sick with tonsillitis. Examination showed that the brick sewer which ran beneath the building had fallen in in many places, and the sore throats ceased when iron pipes were substituted for the brick sewer.

The same gentleman communicates to me the following facts:

At Elberon, N. J., in the latter part of August, 1891, occurred a series of eleven cases of sore throat within a period of eight days in the summer residence of one of the most prominent of the citizens at that place.

The first person attacked was the butler. He complained of great soreness of the throat and severe headache, but continued for two or three days to wait upon the table. When that was done he became altogether ill of the throat and tongue, but no more cases, and no outbreak at the residence of the family followed. There was no exposure to the sewer, and no enlargement of the lymphatic glands. The symptoms of the throat were relieved by the use of gargles and lozenges. The temperature rose to 102° F. There was extreme headache and severe swelling of the throat. The attack was the severest that I have ever seen. The patient was the subject of a severe attack of tonsillitis, but the symptoms of the throat were relieved by the use of gargles and lozenges.

In rapid succession the other members of the family, including several guests, exhibited similar symptoms, in varying degrees of severity, as far as the throat and throat

lesion was that of follicular amygdalitis of a mild type. In the other cases there was simply a dusky redness of the fauces, and some degree of pain in swallowing, lasting from three to six days.

It was discovered, as the result of a sanitary inspection of the dwelling, that a bath-tub on the third floor had been for some time disused, and that the trap had become dry, permitting direct communication with an old cesspool, the existence of which was not known. No other plumbing of the house discharged into this reservoir, and there was no offensive odor from it.

No communication of the butler with any source of infection could be traced, but the negative evidence on this point was not conclusive, as unconscious exposure could not be wholly excluded.

The bath-tub and its connections were removed, and the house has been occupied for two seasons since without the occurrence of further trouble.

Earlier in the same summer a group of four similar cases occurred in a house about half a mile from the one just mentioned. The first patient was a young lady, in whom the throat lesion was similar to that of the butler already referred to, but with the difference that the throat was extremely painful even when at rest, and the dysphagia was so great that the patient could scarcely be prevailed upon to take even the smallest amount of nourishment. The fever in this case was moderate, and there was no aching of the limbs.

Three other cases occurred in the house within a week. One of these showed well-marked follicular inflammation; the other two only engorgement of the mucous membrane, chiefly venous in character.

Examination showed that the main waste-pipe, which ran under the house for nearly the whole length of the latter, was of clay, and was broken in numerous places. The soil along the whole length of this pipe was saturated with sewage. An iron pipe was substituted, and the contaminated soil removed and replaced by dry sand. No sickness has occurred in the house during the two seasons that have succeeded.

Owing to special reasons, there was absolutely no intercommunication between the persons constituting these two groups.

One of the latest contributions to the same subject is a book on the combat with infectious diseases by Brix Pfluh and Nocht (*Die Bekämpfung der Infektionskrankheiten*). After discussing the necessity of access of air to a sewer, to prevent it from getting putrid and giving rise to bad odors and dangers, they say on page 310:

"The transmission of infectious diseases by sewer gas has not been proved by past researches and may be considered as out of the question. But bad sewer air can produce nausea, headache, and malaise (when its effect is persistent), and may become one of the causes of other morbid symptoms. To the workmen employed about sewers the preservation of pure air is of paramount importance. Thus successful acclimation is a great hygienic importance."

Experiments referring to the health of men employed in sewers had negative results. They do not

suffer more than the average population from infectious diseases.

"Only those employed in the sewers of Wiesbaden suffered from rheumatic complaints more than other public employees. This was due to the fact that the Wiesbaden sewers, carrying off the water of the hot springs, have a constant temperature of 25° C. or more, thus exposing the workmen to frequent colds. Thus their rheumatism depended on circumstances not at all connected with sewers or sewer air."

To my mind the assumption that throat disease and sewer air must be connected with each other is probably due mostly to the irritability of the fauces. Pungent odors and tastes are not tolerated, chloroform can not be administered to a sleeping person because of that circumstance, and strong gases produce cough and discomfort. Hence irritation, hyperæmia, and catarrh may well be explained by the contact of malodorous and sharp gases with the vulnerable mucous membranes of the throat, particularly of children, but specific germs and toxins are, unfortunately, not malodorous, not pungent, and not irritant locally. Indeed, it is in this that lies their principal danger.

Compared with the frequent endemical occurrence of sore throats under the apparent influence of sewer exhalations, which is suggested by some of the reports, I am permitted to make use of a report made to H. M. Biggs, M. D., Chief Inspector of the New York Health Department, by A. Clinton, M. D., Inspector. The report is a very careful one, and the one thousand cases of throat affection detailed under the heading of pseudo-diphtheria, which occurred, or rather were reported, from August 1, 1893, to April 1, 1894, in the city of New York from the Battery to East and West One Hundred and Twenty-fifth Street have been accurately located on large city maps. The principal conclusion to be drawn from these two maps, kindly intrusted to me by the Health Department, for whose co-operation in the preparation of this paper I am thus greatly indebted, is this, that to the best knowledge and belief of the experts of the health department the occurrence of throat disease, particularly false diphtheria, is in no way connected with sewers, open sewers, leaky sewers, or outlets of sewers. The same conclusion must be drawn—I may say that just hence—from two other maps placed at my disposal which prove that there is no connection in New York city between false throat and sewer air in any shape or form. In the latter instance there can be no doubt whatever, in the opinion of diphtheria experts, that the report must be correct.

There is, however, some evidence in the practice of every medical man and in public sanitation that cholera, general and febrile, mainly typhoid, comes with the summer heat, wet carpets and other refuse material, though not hot and water be drawn. Outside ventilation has invariably followed their regular removal. The facts carefully collected by the Boardman in his *North Report* of the *Medical Officer of the Prison Council* point a considerable lowering of the death-rate in such an operation, particularly in typhoid fever. The same result has been obtained from the same cause (i. e., improved sewerage) in a number

of cities—such as Salisbury, Bristol, Carlisle—where the sewers are ample and well ventilated.

He asks: "Why is it that some cities, like Chelmsford, Penzance, Worthing, and Morpeth, with ample sewers, have an increased mortality of typhoid? In one, 'the sewage is delivered into a tank by an outfall sewer which enters some six feet below ground,' with the result that when the engine is not at work or the liquid accumulates in the well, cellars get flooded by the sewage, and sewer gases get forced up into the houses (W. H. Corfield, *The Treatment and Utilization of Sewage*, 3d ed., 1887, page 252). In another one there was no ventilation of the sewers, and sewer gas was forced back through the traps of sinks and water-closets. In another the pipe sewers are below the level of the river, so that in times of flood the sewage is backed up into the main sewer for four or five hundred yards. It is known that outbreaks of typhoid followed times of flood when the outfall sewer had been under water."

The general reduction of mortality can not be said to have extended to infants under a year to the same degree. Typhoid fever is not frequent at that early age, and when it occurs, it is mostly mild, and few deaths occur from that source.

The mortality of infants depends on different circumstances. Diarrhæal diseases do not appear to have been visibly benefited by improved sewerage.

Scarlatina, measles, whooping-cough, croup, and diphtheria were not rendered milder or less fatal through improved sanitation in general, and sewers in particular. On the contrary, both scarlatina and diphtheria were greatly increased; on the other hand, "cholera epidemics appear to have been practically harmless in the towns examined" (page 47). Even pulmonary phthisis exhibits a great general reduction of its death-rate wherever, but only there where pipe-sewerage was accompanied with measures taken for the purpose of drying the subsoil generally, such as a special system of deep rain-water culverts.

Stevenson and Murphy, page 11 of their treatise on *Hygiene and Public Health*, refer to the enteric fever in Eastney Barracks, where sewer air was forced back by the tide into the drains, which had no traps but many leaks. When traps were put in and the leaks mended, the fever subsided. Edward Seaton (*Journal of Medical Science*, December 23, 1893) refers to his experience with dry earth closets. When they were largely introduced after the abolition of privy vaults, the mortality from typhoid fever was greatly reduced. The English generally believe firmly in the dependency of typhoid fever on cesspool and sewer exhalations. It is true that typhoid is not to be found frequently where there are no cesspools but cesspools and the drains are everywhere rendered filthy or nearly so, because of their attractive and insidious. If the connection referred from the authors that would be inconsistent in fact cesspools, and worse than mere privies.

I believe I am correct when I say that the large majority of cases of typhoid fever at present in New York are in September and October of years when no report from the country. There is large exodus of people who leave home from year to year, in thousands, travelling

composing materials for its growth and propagation, and the engrafted virus is the real cause, though not the apparent one. "In the same way sewer air acts as the vehicle and not the cause." "By a rational process of thought we feel that this must be so, but sometimes a case crops up to which our reasoning does not apply, and we are left wondering as to how a decomposing mass of matter could become infected."

I should say it could not; for if there is a power that destroys pathogenous germs it is putrefaction.

In many instances the reasoning in this matter is simply emotional. Thus, according to the *Massachusetts Association of Boards of Health, Official Journal*, September, 1893, page 23, mention is made in the discussion on a recent law passed by the State Legislature of Massachusetts on the licensing of plumbers of Mr. Roe, of Worcester, who introduced the bill and worked for it. He is mentioned as "a man who had difficulties to encounter in his own house regarding unsanitary conditions. His child died of diphtheria, and the house was examined by an inspector of our board and found to be in an unsanitary condition. At the time he was loath to accept it as the cause of the death of his child, but eventually he felt convinced. He is an ex-principal of our high school here and a broad-minded man, and is thoroughly convinced of the fact that the child must have died from the effects of the unsanitary conditions." This is the kind of report that will influence public opinion. Emotional reasons in place of scientific reasoning will always carry the day. *Credo quia absurdum est.*

(To be continued.)

MERYCISM.*

By WILLIAM A. HAMMOND, M. D.

SURGEON GENERAL, U. S. ARMY (RETIRED LIST).

So far as I am aware, no example of this curious affection has been reported in this country. It may therefore be of interest to the association to receive the details of a case that was under my care a few months ago, and also, perhaps to excuse me if I venture to give a short account of the disorder.

Merycism (*trypocarpus*, rumination) is the abnormal act or habit of rousing the food from the stomach and re-masticating it. It is therefore the performance of the function of rumination by the human subject. It was not known to the ancients, or, if known, was not regarded by them as worthy of notice as a disease, for no medical writer previous to Fabricius ab Acupunctis,† who wrote in 1703, has mentioned it, and it has almost entirely escaped notice from the systematic writers. It is not, for instance, considered in Ziemssen's *Cyclopaedia*, or even mentioned, except incidentally, in my own compendium of *Diagnosis of the Stomach*. It is, however, mentioned at some length by

Copland* under the head of "Rumination," and is defined as "the regurgitation of food which has passed into the stomach and which is remasticated and again swallowed." In all, less than fifty cases have been reported, though, of course, this is no exact indication of the prevalence of the disorder. It certainly, however, is rare, for not only has no instance been recorded by medical writers of this country, but I have not, with all my inquiries, met with a physician who had witnessed a case.

Fabricius—who, as I have said, was the first medical writer to call attention to merycism—reported two cases. One of these was that of a nobleman who experienced the greatest pleasure from the fact of its existence in his person, inasmuch as it gave him the gustatory delights of two meals for the one eaten. The regurgitation took place about an hour after the food had been swallowed, and was then more deliberately masticated than in the first instance. This gentleman, Fabricius remarks, had not inherited a pair of horns such as grew out of his father's forehead, but he possessed the animal function of rumination instead. In another case, occurring in a monk, the horns were present. From these facts the conclusion was reached with that extraordinary absence of the logical faculty, which exists even to this day, that all human beings that ruminate have horns, and from that assumption the transition was easy that they also possess two stomachs.

That distinguished physiologist, the late Dr. Brown-Séquard, acquired merycism after reaching adult age. As I learned from him personally several years ago, he had undertaken a series of experiments on digestion, and, with that total abnegation of self which characterized him, he performed them on himself. He swallowed small pieces of sponge attached to strings so as to allow of their withdrawal from the stomach saturated with the digestive mass. The process went on very well for some time, but finally the stomach rebelled and the sponges were rejected. Nor could he with all his efforts succeed in again causing tolerance. At the same time the food that had been eaten was also vomited, and at last the habit of regurgitation became fully established. After a few years he acquired some degree of control over the matter, so that it was at times possible for him to prevent the action by a strong effort of the will. It was a source of great annoyance to him, and not the least so (inasmuch as it is a great measure deprived him of social pleasures which he would otherwise have enjoyed).

The affection is much more frequent in the male than in the female sex. Several cases have been observed in imbeciles or idiots. There was marked deficiency in the case that was under my care. I am inclined, however, to think that the greater comparative frequency of its occurrence in such subjects is due to the fact that they are content with an indifferently chewed, thick food and to swallow it soon after the swallowing motion has reached the stomach. By this procedure the mastication is necessarily disturbed and regurgitation must ensue. As was

* Read before the American Neurological Association, June 1894.

† *Tractatus de Merycismo*, 1703. Translated into English by J. H. Hammond, M. D., 1894.

* *Journal of Medical Research*, New York, 1894, 10, 1.

thorities agree that insufficient mastication and excessive haste in eating are the most powerful exciting causes of merycism. In a case reported by Cullerier the subject regurgitated his food only when he was in a hurry, and consequently swallowed the alimentary bolus before it was properly chewed. When more at leisure and eating slowly he was not troubled in this way. In the case under my observation rapid eating always caused the food to be brought up more promptly than when time was taken to eat deliberately. As a rule, the patient ate with scarcely any mastication, and undoubtedly this bad habit was the cause of the affection.

With these preliminary observations I pass to the consideration of the case referred to:

E. S., nineteen years old, entered my private hospital July 29, 1894, to be treated for a peculiar mental condition approaching imbecility, but in which the chief abnormal phenomena were those showing the predominance of certain instinctive tendencies and a lack of moral sentiments rather than of intellectual development. It is not my purpose, however, at this time, to consider any of the morbid symptoms exhibited by this patient, except the merycism which had been an accompaniment for several years. Being of the opinion that it was useless to attempt by medication to relieve him of this condition, I confined my attention to a study of its manifestations. I found that every food was regurgitated in from half an hour to an hour after it had been swallowed, and that it was then remasticated with gustatory satisfaction; and then again swallowed. Liquids taken alone remained in the stomach, and even when they were ingested with solid food the mass that came up was comparatively free from them.

To a certain extent the action was under the control of the will—that is, he could accelerate or retard it by voluntary effort, though he could not altogether prevent it. No nausea was present, nor were there any other uncomfortable symptoms. He could not very accurately describe the taste. It appeared to him that of the food that had been eaten, not more than a third of one thousandth of the individual substances. It was somewhat sweet and agreeably acid; something like weak tea, or weak coffee, but with a distinct flavor of its own, varying, however, according to the character of the food taken, though never found, as I have said, to be that of the food.

Immediately preceding the regurgitation there was an indefinite sensation in the epigastric region, something like that experienced just before the belching of water. From the time of the regurgitation the patient would usually be able to describe the food taken from the gastric region. Sometimes, though, he would suggest, possibly erroneously, that some of the substances were not present, or that they were present in a different quantity. In the majority of cases, when the food had been taken in a hurry, he would not be able to describe it, and he would not be able to describe it.

In the majority of cases, when the food had been taken in a hurry, he would not be able to describe it, and he would not be able to describe it.

Immediately preceding the regurgitation there was an indefinite sensation in the epigastric region, something like that experienced just before the belching of water. From the time of the regurgitation the patient would usually be able to describe the food taken from the gastric region. Sometimes, though, he would suggest, possibly erroneously, that some of the substances were not present, or that they were present in a different quantity. In the majority of cases, when the food had been taken in a hurry, he would not be able to describe it, and he would not be able to describe it.

In the majority of cases, when the food had been taken in a hurry, he would not be able to describe it, and he would not be able to describe it.

from any other gastric disorder; that the most of those affected, so far from experiencing anything disagreeable, derive a good deal of pleasure from its occurrence; and that, as to himself, he looks forward with satisfaction to each meal, for he knows he will obtain a double enjoyment from the food taken. He admits, however, that when the ingesta remain three or four hours in the stomach before regurgitation takes place, the taste is disagreeable, being bitter or acid according to the nature of the substances eaten. It appears to me that a person whose food remains three or four hours in the stomach can scarcely be said to have a healthy digestion.

Copland advises that merycism should be treated as a form of indigestion, but admits that all means will probably fail unless the patient takes his meals deliberately, masticates his food sufficiently, and eats no more than his digestive organs can dispose of. He does not, however, appear to have been successful in either of the three cases that came under his notice. Blanchard admits that there is only one case on record in which medication was effectual, and that was reported by Gintrac as being cured by sulphate of quinine. Tarbes, in his monograph on an instance that came under his observation, mentions some interesting details. The case was that of a young conscript who was rejected on account of being affected with merycism. The disorder continued, and four or five years subsequently he married. Up to this time he had never had sexual intercourse. On the morning following his marriage regurgitation began to diminish in the number of the occurrences and in the quantity of food brought up, and at the end of the eighth day had entirely disappeared.

As I have previously stated, no special treatment was undertaken against the merycism with which my patient suffered, but on the 3d of August, 1893, I trephined him for his mental condition, removing a button of bone the size of a dollar from that part of the skull over the superior extremity of the fissure of Rolando on the right side. There were no unusual features connected with the operation, but it was noticed that regurgitation did not occur with the meals he ate subsequently till on the fifth day, when there was a slight return. On August 11th I removed a similar button from the corresponding part of the left side of the skull. From this time till the present (May 15, 1894) there has been no regurgitation, although for the six weeks afterward that he remained under my observation there was no very great alteration in his way of eating. There was, however, decided improvement in his mental condition, and his mother writes me from Brussels, where he now is, that the change is most notable, and that there are scarcely any evidences of mental idiosyncrasy to be perceived.

Whether the cure of the merycism in this case is directly due to the operation on the cranium or is the result of the mental improvement is a question that it would be difficult to answer, but it is probable that trephining would prove curative of merycism in the case of a person not the subject of mental deterioration. I am inclined to think that it would, and would another instance come under my care I should be disposed to recommend the operation, provided the patient not sufficiently anxious to be cured to warrant its performance.

A "sensitive center" has not yet been clearly located,

and even if it should be recognized, I doubt if it would correspond with a regurgitating center, should such exist in the human brain. That there is such a center in ruminant animals is scarcely a matter of doubt. Perhaps there is in the brain of man a center—the relic of that which was active in a former state of human development—rudimentary, dead, but which, as is seen with other analogues, occasionally, under the influence of favorable conditions, starts into activity. At any rate, mercism would appear to be due in some cases to an effort of Nature to secure proper mastication of the food; not always, however, for if rapidity of eating and imperfect mastication are prolific causes of the affection, it would make itself manifest as pre-eminently an American disease.

Note.—Since this paper was written, Dr. Edward C. Range, of St. Louis, has sent me a very interesting monograph read by him before the St. Louis Academy of Sciences and published in its *Transactions* for May 7, 1894. Precedence of publication, therefore, belongs to him. It is to be hoped that Dr. Range will bring his case more fully before the medical profession. His researches and observations are exceedingly valuable.

A PSEUDO-LAPAROTOMY.

AND ITS RESULTS.

By H. A. LEIPZIGER, M.D.,
BERKINGTON, IOWA.

Is drawing attention to the following report I desire to disavow at the outset any intention of suggesting a new line of treatment or opposing any approved treatment now in vogue.

The case reported is an interesting one from a physical as well as a psychological standpoint. It shows to what extent the moral effect of an operation may influence the result of treatment. Whether a repetition of the procedure adopted in this case would be advisable or even justifiable in any other case, I am not prepared to maintain; but, as we build up sound principles of practice mainly from accumulation of facts, every additional fact bearing upon a certain line of treatment must be of advantage.

This is the case of a young woman who suffered from severe dysmenorrhea from the time menstruation was established; who was married in the course of time, bore children, and continued to suffer from dysmenorrhea and an additional trouble—viz., cutting vaginitis. A year or more was spent with various methods of treatment, with progressive increase of the trouble. In the course of several consultations operative measures were naturally alluded to, and some friends suggested that had been reflected upon. As diffidence by a removal of the uterus. It may be that these two circumstances aroused in the patient a more or less hysterical desire to be operated upon, yet there was never a pronounced request by the patient for anything of the kind, and the history as given below does not show its hysterical condition.

An operation having been repeatedly proposed to me, and finally on the 20th removed myself with a decided intention the place of the same effect of alleviation and the usual

after-treatment as applied to abdominal sections. The patient was taken to the hospital with the understanding that an operation was to be performed, but nothing was asked by her or said to her about the nature of the operation. The immediate effect of the operation was nil; as to the remote effect, the woman to-day, nine months after the pseudo-operation, without any other treatment whatever, is free from pain at her menstrual periods, and the vaginismus so much relieved that sexual intercourse, almost intolerable before, is readily indulged in without inconvenience.

Mrs. X., a blonde German-American, aged twenty-seven years, married, has had three children and no miscarriages. Occupation before marriage, domestic; family history negative; no serious illness during childhood; first menstruation began on her sixteenth birthday, and the suffering was such as to confine her to bed for a week; second menstruation at about seventeenth birthday, and the third occurred six months later; then an interval of three months elapsed, and from that time on menstruation was always regular and always accompanied by sufficient pain to compel going to bed for a few days. These pains were described as "cramplike" and "bearing down," with tenderness over the whole lower part of the abdomen, and they were occasionally present in a less degree between the monthly periods. At the age of eighteen the patient married, being at that time in good general health and weighing one hundred and fifteen pounds. Dyspareunia was marked, and continued so even after the normal delivery of the first child, fifteen months after marriage. The menses occurred at once after the birth of this child, and were as painful as before. At the end of another fifteen months another child was born in normal labor, but this was followed by an amenorrhea of eighteen months' duration. During the first six months of this period she was free from pain, but thereafter she complained of occasional severe, cramplike pains, much local tenderness, and increased vaginismus, despite the absence for twelve months of the monthly flow.

With the return of the menses she had to take to bed for two weeks, and was compelled to repeat this for a few days of every month during the next three years, at the end of which time the third child was born. The patient said that while carrying this last child she suffered considerable pain in the region of the ovaries and uterus. That when occurred four years ago. The amenorrhea of lactation lasted for six months, and the re-establishment of the menstruation flow was accompanied by so marked inconvenience, but thereafter the old trouble returned with renewed vigor.

I was first called in to see this woman about a year and a half ago, and at that time I found her in such miserable condition as to render further delay in the treatment of the pain in the pelvis and uterus to be impossible. In the first two weeks of treatment, however, I found no improvement, and the patient was so much distressed that I was compelled to resort to the use of the abdominal section. The operation was performed on the 20th of July, 1894, and the patient was taken to the hospital with the understanding that an operation was to be performed, but nothing was asked by her or said to her about the nature of the operation. The immediate effect of the operation was nil; as to the remote effect, the woman to-day, nine months after the pseudo-operation, without any other treatment whatever, is free from pain at her menstrual periods, and the vaginismus so much relieved that sexual intercourse, almost intolerable before, is readily indulged in without inconvenience.

F. Ewers, and beyond extreme sensitiveness and some enlargement of both ovaries, nothing pathological was discovered. The uterus was normally large and in good condition. The presence of an unusual number of caruncule myriformes and a little cicatricial tissue about the fourchette gave rise to the suggestion by Dr. Ewers that their removal might relieve the vaginismus, and they were accordingly clipped off; but this procedure yielded no appreciable result. Dysmenorrhœa continued with one additional symptom—viz, an occasional chill and rise of temperature which gave rise to the first suggestion by a consultant of possible pyosalpinx. At one such period the thermometer registered 104°.

For about nine months the woman went through a trial of most of the remedies usually given for her condition, but, as she could not take morphine in any form, fortunately escaped the horrors of the morphine habit. Vaginal douches were also precluded, because the introduction of the syringe tip was very painful, and the douche itself more irritating than quieting. During the interval between menstruations the vaginismus and hyperæsthesia were pronounced, but not nearly so much as at these periods.

About ten months ago the proposition to remove this woman's annexa was seriously set forth as the only curative means. About this time there were reported a number of cases of failure to relieve the symptoms by this operation, and as I was by no means satisfied in my own mind as to the rôle which hysteria was playing in this case, I suggested to my friend Dr. Ewers that we try the play of Hamlet with Hamlet left out—in other words, that we do an imaginary laparotomy.

The patient was taken to the hospital as above mentioned, at a time midway between her menstrual periods, and put to bed for two or three days. On August 24th an incision about four inches long was made, not quite down to the peritoneum and closed with interrupted silk sutures; some little cicatrix of the fourchette was snipped off, and the cut edges were approximated with two silk-worm-gut sutures. The abdominal sutures were removed on the third day. The patient left the bed about the tenth day and the hospital in about three weeks—there being, of course, no necessity for so protracted a stay except to carry out the plan originally adopted.

At this time the patient's weight was eighty-nine pounds. Her first menstrual period after leaving the hospital was painful, but markedly less so than any previous one. From this time on the successive periods became more and more tolerable; the hyperæsthesia rapidly subsided. Within three months she indulged the sexual demands of her husband with but little discomfort, and a few days ago, nine months after leaving the hospital, she informed me that the sexual act was accompanied by no pain. Her menses occur regularly and normally every month, and she has not taken to the bed once during this time, but, on the contrary, goes about her household duties the same during the menstrual as the intermenstrual period, and last month did her own laundry, washing for the first time in years. She has seemed happier than at any time since the operation, and, to all practical intents and purposes, is enjoying good health.

In answer to the probable suggestion that this was a simple case of hysteria, I will remark that the woman before me, in the preceding story, where would desire for an operation, and to be looked for, she was much attracted to her husband and two children and would not leave them to go to a hospital from one whom, and the expense were incurred in the undertaking would have deterred her from going for a surgical laparotomy.

A prominent feature of mycosis has been suggested that

the vaginal cicatrix may have caused the vaginismus and other reflex symptoms. But it must be remembered that this cicatrix was the result of parturition, while the vaginismus dated from the day of marriage. One of the most singular features of the case to me is the coincident rise of temperature at the monthly sickness. There has been nothing of this noticeable since the operation, hence it must be considered, for want of a better explanation, another nervous symptom.

A CASE OF MYCOSIS OF THE PHARYNGEAL TONSIL.

By JOHN DUNN, M. D.,
RICHMOND, VA.

Mycosis of the pharyngeal tonsil has been observed by Schubert and Liebenmann (Bosworth, *The Throat*, p. 189): "In both cases," says Bosworth, "it should be stated that the growth was aspergillus." The contributions on the subject of mycosis of the fauces have been more or less numerous since Fränkel's first report in 1873. These, however, so far as I am aware, deal only with the development of the fungous growth on the tonsils, faucial and lingual, and on the soft palate (?). I can find no record of a case of mycosis of the pharyngeal tonsil where the disease was due to the presence of the spores of *Mycosis leptothrix*. The following case, then, although occurring in the course of an attack of faucial mycosis, may be of some interest:

Miss V., aged twenty-four years, seen for the first time January 23, 1894, showed an abundant development of *Mycosis leptothrix* on both faucial tonsils, throughout their whole extent, from the junction of the anterior and posterior pillars to the base of the tongue. The tonsils were not hypertrophied. There were on the right side of the pharynx several small areas of mycosis in the chain of lymph tissue which extends up the pharyngeal wall adjacent to the posterior pillar. The most abundant growth of this fungus, however, was in the lingual tonsil, where apparently almost every aggregation of lymph tissue had its mass of whitish growth protruding from it. Some of these masses projected as much as two or three millimetres from the tissue beneath and were fully a millimetre in diameter. They extended as far down as the glosso-epiglottic junction. There were also one or more mycotic areas in the lymph chain which extends along the outer boundary of the pyriform sinuses. These mycotic masses did not coalesce, but each one existed for itself. Examination of the post-nasal space revealed several whitish masses on the surface of the pharyngeal tonsil. They did not, however, present the same appearance as those in the lingual or faucial tonsils. It was apparently a deposit of the fungi from the air passing through the nasopharynx, as, indeed, was the case, for they would be present some days, absent others, showing clearly that they had no firm hold in the pharyngeal tonsillar tissue. These whitish masses were, however, large, perhaps a millimetre in surface diameter. There is one point to notice here. Although there were the usual sensations of fullness, of a foreign body, of stiffness of the lingual and faucial regions, there were no unpleasant sensations referable to the naso-pharyngeal space. Miss V. was under treatment until April 8, 1894, about the middle of March she began to complain of "a new sensation" in her throat. "It feels as though the trouble had gone up behind my palate." Examination proved this statement to be true.

In the pharyngeal tonsil were four mycotic areas leaving their base distinctly in the body of the upper pharyngeal lymph tissue. These areas presented the same appearance as similar areas in the lingual or faucial tonsils. They were deep in the tonsillar tissue and could not be brushed off. Accompanying their development there was a considerable amount of swelling of the adjacent lymph tissue.

As the patient was an intelligent woman and anxious to be rid of the annoyance the presence of this fungus caused, and as she was under active treatment for two months and a half, some remarks about the results of the various methods resorted to for the purpose of destroying these fungous growths may not be uninteresting. Internally, both acids and alkalis were administered at different times, in addition to the local treatment, in the hope of influencing the growth of this fungus. No result referable to either was obtained. Were local treatment omitted for two days, there was always a marked increase in the size and number of the mycotic areas. Gargles, washes applied with mops by patient, spraying, and applications of the usual essential oils, of boric acid, of soda preparations, of bichloride solutions, of creosote solution, proved all of little value when treatment applied directly to the mycotic areas was neglected. Mopping the base of the tongue resulted in the causation of constant nausea, and had to be desisted from. Nor is it difficult to see why the above local applications failed to effect a cure in a disease the greater part of whose area of distribution they failed to reach, while the most powerful of the above remedies, applied as sprays or gargles, could affect only the outer layers of the mycotic masses. Tincture of iodine was applied locally to individual areas. It was found to have no especial value, and could not be confined to the fungous growths, while its tendency to irritate the adjacent mucous membrane made its continuous use unadvisable. The use of nitrate of silver in solutions of varying strength was found also to have more disadvantages than advantages. Nor could pure alcohol be used as a remedy with good hopes of obtaining a cure. Bichloride of mercury (1 to 1,440) was used, and the results obtained did not justify its continuance. The greater part of both faucial tonsils was removed with the cold snare; but it was found that the mycotic areas extended deeper into the tonsillar tissue than it was safe to cut, and also into regions in which the cold snare could not be used with advantage—*e. g.*, close behind the anterior pillar, exteriorly. The remaining areas were burned out with the electric point. I was not long, however, in discovering that surgery alone was unavailing in this disease, as a tonsil upon which could be seen no mycotic areas to-day, would, 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127 or 128 or 129 or 130 or 131 or 132 or 133 or 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147 or 148 or 149 or 150 or 151 or 152 or 153 or 154 or 155 or 156 or 157 or 158 or 159 or 160 or 161 or 162 or 163 or 164 or 165 or 166 or 167 or 168 or 169 or 170 or 171 or 172 or 173 or 174 or 175 or 176 or 177 or 178 or 179 or 180 or 181 or 182 or 183 or 184 or 185 or 186 or 187 or 188 or 189 or 190 or 191 or 192 or 193 or 194 or 195 or 196 or 197 or 198 or 199 or 200 or 201 or 202 or 203 or 204 or 205 or 206 or 207 or 208 or 209 or 210 or 211 or 212 or 213 or 214 or 215 or 216 or 217 or 218 or 219 or 220 or 221 or 222 or 223 or 224 or 225 or 226 or 227 or 228 or 229 or 230 or 231 or 232 or 233 or 234 or 235 or 236 or 237 or 238 or 239 or 240 or 241 or 242 or 243 or 244 or 245 or 246 or 247 or 248 or 249 or 250 or 251 or 252 or 253 or 254 or 255 or 256 or 257 or 258 or 259 or 260 or 261 or 262 or 263 or 264 or 265 or 266 or 267 or 268 or 269 or 270 or 271 or 272 or 273 or 274 or 275 or 276 or 277 or 278 or 279 or 280 or 281 or 282 or 283 or 284 or 285 or 286 or 287 or 288 or 289 or 290 or 291 or 292 or 293 or 294 or 295 or 296 or 297 or 298 or 299 or 300 or 301 or 302 or 303 or 304 or 305 or 306 or 307 or 308 or 309 or 310 or 311 or 312 or 313 or 314 or 315 or 316 or 317 or 318 or 319 or 320 or 321 or 322 or 323 or 324 or 325 or 326 or 327 or 328 or 329 or 330 or 331 or 332 or 333 or 334 or 335 or 336 or 337 or 338 or 339 or 340 or 341 or 342 or 343 or 344 or 345 or 346 or 347 or 348 or 349 or 350 or 351 or 352 or 353 or 354 or 355 or 356 or 357 or 358 or 359 or 360 or 361 or 362 or 363 or 364 or 365 or 366 or 367 or 368 or 369 or 370 or 371 or 372 or 373 or 374 or 375 or 376 or 377 or 378 or 379 or 380 or 381 or 382 or 383 or 384 or 385 or 386 or 387 or 388 or 389 or 390 or 391 or 392 or 393 or 394 or 395 or 396 or 397 or 398 or 399 or 400 or 401 or 402 or 403 or 404 or 405 or 406 or 407 or 408 or 409 or 410 or 411 or 412 or 413 or 414 or 415 or 416 or 417 or 418 or 419 or 420 or 421 or 422 or 423 or 424 or 425 or 426 or 427 or 428 or 429 or 430 or 431 or 432 or 433 or 434 or 435 or 436 or 437 or 438 or 439 or 440 or 441 or 442 or 443 or 444 or 445 or 446 or 447 or 448 or 449 or 450 or 451 or 452 or 453 or 454 or 455 or 456 or 457 or 458 or 459 or 460 or 461 or 462 or 463 or 464 or 465 or 466 or 467 or 468 or 469 or 470 or 471 or 472 or 473 or 474 or 475 or 476 or 477 or 478 or 479 or 480 or 481 or 482 or 483 or 484 or 485 or 486 or 487 or 488 or 489 or 490 or 491 or 492 or 493 or 494 or 495 or 496 or 497 or 498 or 499 or 500 or 501 or 502 or 503 or 504 or 505 or 506 or 507 or 508 or 509 or 510 or 511 or 512 or 513 or 514 or 515 or 516 or 517 or 518 or 519 or 520 or 521 or 522 or 523 or 524 or 525 or 526 or 527 or 528 or 529 or 530 or 531 or 532 or 533 or 534 or 535 or 536 or 537 or 538 or 539 or 540 or 541 or 542 or 543 or 544 or 545 or 546 or 547 or 548 or 549 or 550 or 551 or 552 or 553 or 554 or 555 or 556 or 557 or 558 or 559 or 560 or 561 or 562 or 563 or 564 or 565 or 566 or 567 or 568 or 569 or 570 or 571 or 572 or 573 or 574 or 575 or 576 or 577 or 578 or 579 or 580 or 581 or 582 or 583 or 584 or 585 or 586 or 587 or 588 or 589 or 590 or 591 or 592 or 593 or 594 or 595 or 596 or 597 or 598 or 599 or 600 or 601 or 602 or 603 or 604 or 605 or 606 or 607 or 608 or 609 or 610 or 611 or 612 or 613 or 614 or 615 or 616 or 617 or 618 or 619 or 620 or 621 or 622 or 623 or 624 or 625 or 626 or 627 or 628 or 629 or 630 or 631 or 632 or 633 or 634 or 635 or 636 or 637 or 638 or 639 or 640 or 641 or 642 or 643 or 644 or 645 or 646 or 647 or 648 or 649 or 650 or 651 or 652 or 653 or 654 or 655 or 656 or 657 or 658 or 659 or 660 or 661 or 662 or 663 or 664 or 665 or 666 or 667 or 668 or 669 or 670 or 671 or 672 or 673 or 674 or 675 or 676 or 677 or 678 or 679 or 680 or 681 or 682 or 683 or 684 or 685 or 686 or 687 or 688 or 689 or 690 or 691 or 692 or 693 or 694 or 695 or 696 or 697 or 698 or 699 or 700 or 701 or 702 or 703 or 704 or 705 or 706 or 707 or 708 or 709 or 710 or 711 or 712 or 713 or 714 or 715 or 716 or 717 or 718 or 719 or 720 or 721 or 722 or 723 or 724 or 725 or 726 or 727 or 728 or 729 or 730 or 731 or 732 or 733 or 734 or 735 or 736 or 737 or 738 or 739 or 740 or 741 or 742 or 743 or 744 or 745 or 746 or 747 or 748 or 749 or 750 or 751 or 752 or 753 or 754 or 755 or 756 or 757 or 758 or 759 or 760 or 761 or 762 or 763 or 764 or 765 or 766 or 767 or 768 or 769 or 770 or 771 or 772 or 773 or 774 or 775 or 776 or 777 or 778 or 779 or 780 or 781 or 782 or 783 or 784 or 785 or 786 or 787 or 788 or 789 or 790 or 791 or 792 or 793 or 794 or 795 or 796 or 797 or 798 or 799 or 800 or 801 or 802 or 803 or 804 or 805 or 806 or 807 or 808 or 809 or 810 or 811 or 812 or 813 or 814 or 815 or 816 or 817 or 818 or 819 or 820 or 821 or 822 or 823 or 824 or 825 or 826 or 827 or 828 or 829 or 830 or 831 or 832 or 833 or 834 or 835 or 836 or 837 or 838 or 839 or 840 or 841 or 842 or 843 or 844 or 845 or 846 or 847 or 848 or 849 or 850 or 851 or 852 or 853 or 854 or 855 or 856 or 857 or 858 or 859 or 860 or 861 or 862 or 863 or 864 or 865 or 866 or 867 or 868 or 869 or 870 or 871 or 872 or 873 or 874 or 875 or 876 or 877 or 878 or 879 or 880 or 881 or 882 or 883 or 884 or 885 or 886 or 887 or 888 or 889 or 890 or 891 or 892 or 893 or 894 or 895 or 896 or 897 or 898 or 899 or 900 or 901 or 902 or 903 or 904 or 905 or 906 or 907 or 908 or 909 or 910 or 911 or 912 or 913 or 914 or 915 or 916 or 917 or 918 or 919 or 920 or 921 or 922 or 923 or 924 or 925 or 926 or 927 or 928 or 929 or 930 or 931 or 932 or 933 or 934 or 935 or 936 or 937 or 938 or 939 or 940 or 941 or 942 or 943 or 944 or 945 or 946 or 947 or 948 or 949 or 950 or 951 or 952 or 953 or 954 or 955 or 956 or 957 or 958 or 959 or 960 or 961 or 962 or 963 or 964 or 965 or 966 or 967 or 968 or 969 or 970 or 971 or 972 or 973 or 974 or 975 or 976 or 977 or 978 or 979 or 980 or 981 or 982 or 983 or 984 or 985 or 986 or 987 or 988 or 989 or 990 or 991 or 992 or 993 or 994 or 995 or 996 or 997 or 998 or 999 or 1000.

the snare and cautery used in the faucial tonsils and on the base of the tongue had destroyed only the surface portion of the growths, and that the recurrence took place from deeper portions, which remained undestroyed. And this I found to be the case. About the middle of March, the patient having been in almost daily attendance at my office, I found that while I had succeeded in greatly diminishing the total number of mycotic areas, I was far from obtaining a cure, inasmuch as a day's neglect of treatment would put the throat three or four days further from a cure, so rapidly did the leptothrix multiply. It occurred to me that a solution of permanganate of potassium might be useful. A saturated solution was accordingly prepared, and a direct application was made to the mycotic areas; a bent probe and cotton was used for the purpose. The result was a pleasing one. The stain made by the permanganate on the mucous membrane was rapidly washed off by the changes in the epithelial cells, while the projecting mycotic masses became shriveled and stained a deep black, and retained this stain for several hours. The fauces generally were then washed out with this solution. I found, too, that the permanganate has the power of destroying the free fungi in the upper air-passages, of destroying as far as it reaches the mycotic masses, and, further, if I may judge by results, has the power of penetrating more deeply into the crypts whence these fungous growths spring than any other substance I experimented with. The applications were made twice daily, and I could notice from day to day that the number of diseased areas became fewer and fewer, until on April 8th, when the patient returned to her home in the country, the tonsils for more than a week had shown no mycotic growths; the nasopharynx was free; so was the base of the tongue, if we omit several minute areas which showed their existence by the stain left after the use of the permanganate. The mycotic areas in the pharyngeal tonsil were removed with Löwenberg's adenoid forceps. The fungous growth was found to extend into the lymph tissue of this region to the depth of two or three millimetres, the removed lymph tissue showing this.

Repeated microscopic examinations, made by myself, of these fungous masses showed them to consist of the rod-like bodies of different lengths, leptothrix, some granular matter—which, however, was small in amount to the proportion of epithelial cells—while the whole was swarming with myriads of minute bacteria of the monad form. I found that the fungi could be most readily demonstrated and that their outlines could be most plainly seen when prepared as follows: Place some of the growth on a slide; drop over it two drops of a saturated solution of permanganate of potassium; over this place a cover glass; press this firmly down. The permanganate solution gives a purplish color to the general field, staining more or less deeply the epithelial cells, while the fungi remain without stain and can readily be distinguished. It will be seen that the leptothrix form of the schizomycetes does not move at all, while the monad form, if it is present, does move. Care should be taken not to confound the leptothrix fungi with the permanganate crystals. There was one other point I noticed while treating the disease, namely, the appearance of minute granules upon the mucous membrane of the soft palate. These granules varied in number from time to time, being at times plentifully present, at times, I thought, I could not locate them accurately, with the finger and thumb, the majority of the granules.

As the result of my experiments in this case, I would advise in faucial tonsitis the following use of treatment. Removal of the larger masses by means of foreign-body forceps and pulling those out as far as possible from the

and the ability to see the drum membrane, which is parchment-like in health and red and injected when the ear is inflamed. I may add that the treatment is usually simple. Most cases will yield to the hot douche and a few drops of a mixture containing one part of chloroform to seven of olive oil.

Trusting not only that my experience will be of interest to you, but that it will excite you to further investigation as to the part played by the ear in causing cerebral disturbances in infantile diseases, whether intestinal or not. I think it possible that some cases of scarlet fever and measles with cerebral symptoms owe much of their malignancy to disease of the ears, and I trust that your observations may extend to these cases as well.

CASE I.—A. R., aged two years, February 2, 1892. Acute intestinal derangement with cerebral complications. The attack had been ushered in, about a week before, with the usual symptoms of peevishness, restlessness, disturbed sleep, appearance of distress, fever, frequent pulse, purging, vomiting, distended abdomen, etc. About the third day there were slight convulsive seizures, increased restlessness, frequent crying, rolling from side to side, scratching the face, pulling and boring at the ears, sluggish pupils, and vacant stare. I was called in at this stage by Dr. S. A. Rogers to see if ear trouble existed, and found subacute inflammation of the middle ear on each side. I instilled the ears with Pasteur's hot bag and douches the ears with hot water. The child, which had been fretful and without natural sleep for some days, dropped off while the douches were being used, had a good sound sleep of some hours' duration, and awoke much improved. Under this ear treatment alone, with proper attention to diet, the child made an uninterrupted recovery in less than a week. There was no return of cerebral symptoms.

CASE II.—M. R., aged a year and a half, November, 1893. Acute intestinal derangement with cerebral complications. The history was similar to that of Case I, except that all of the symptoms were more pronounced. The convulsions were frequent, numerous, severe, and of epileptoid character. The rolling of the head was almost continuous. The pupils were dilated, sometimes dilated, sometimes contracted, and at times the two would be of different size. There was a vacant stare; she seemed to know no one, and ate only when food was put in her mouth. The pulse was frequent and weak, and the circulation poor. The frequent use of castor oil caused her to refuse to eat or nurse, and failing to receive the nourishment doing this rapidly, frequently, and without reason or regularity. Her condition was considered very serious. Dr. S. A. Rogers called her in to see if I could discover any ear trouble.

I found acute inflammation of the middle ear, with a large abscess in the soft tissue and membrane between the two bones. I instilled the ear with the hot water as a preparation for the douche, then the ear with Pasteur's hot bag and used the hot douche. Relief was marked. The child began to eat and sleep calmly, but for five or six days. Appetite returned and she acted naturally again. Under this treatment about a further recovery was made in ten days. A few small convulsive seizures were experienced during the next week, but they ceased with the same treatment. The inflammation subsided and the same result followed.

Since writing the foregoing I have seen in the last (March) number of the *Lancet* Medical Journal an article which I append:

On the Frequency and Importance of Otitis Media in Sick Children.—Dr. Rasch, of Copenhagen, has examined the middle ear in sixty-one post-mortem examinations of children up to two years of age. The middle ear was normal only in five cases (eight per cent.); in forty-six cases (75.5 per cent.) suppurative otitis media was found in either one or both ears, and in eight cases (14.5 per cent.) simple catarrhal otitis media was present. Otitis media was observed in nearly all the children who had died of broncho-pneumonia (forty-three cases), but had not been diagnosed during life on account of the membrana tympani being rarely perforated, although pus was found in seventy-seven per cent. of these cases. Several of the children had exhibited brain symptoms, sometimes so marked that meningitis was diagnosed during life, while the post-mortem examination revealed no affection of the brain or its membranes; the author therefore calls attention to this source of error in diagnosis in cases of broncho-pneumonia. In forty-three cases the exudate was examined more minutely, and in thirty-three of these pneumococci were present. Whenever pneumococci were found, the tympanic membrane was without perforation. Perforation of the membrane was, on the whole, a very rare occurrence, appearing only in four of the sixty-one cases examined. The author is inclined to believe that broncho-pneumonia in infants plays a rôle in the ætiology of deaf-mutism, the otitis media extending to the internal ear.—*Hospitals-Tidende*, Nos. 18-20, 1893.

THE INSANE.

ASYLUMS AS THE PROPER PLACE FOR
THE TREATMENT OF ALIENATION OF THE MIND.

By JOSEPH J. O'CONNELL, M. D.,

FOUNDING OF THE INSANE FOR THE
DEPARTMENT OF CHARITIES AND CORRECTIONS, KING'S COUNTY, NEW YORK.

PRACTITIONERS are often called upon to treat patients with diseased minds, and are then confronted with this problem: Is any (the treatment) really beneficial, or are they to be treated and sent to equally good care at home? I take the liberty of answering this question from my experience as examiner of the insane for the Department of Charities and Corrections in Kings County, in which capacity I have committed some four or five thousand persons to asylums in New York and vicinity.

The institutions in this State, both private and public, are under the jurisdiction of the State Commission in Lunacy, and the first important step in the advancement of the treatment of the insane dating from the time when commissioners were appointed to supervise the management of these institutions. A few years ago any person, whether physician or layman, citizen or foreigner, could establish a retreat for the insane and employ whatever treatment he pleased with the unfortunates who came under his charge; and it was not long ago that a question as to the propriety of sending to it was not so long could the patient be retained until the day of emancipation had become a case in point.

The success of these limited or half-century in the institutions, and which were founded upon the idea of the "moral treatment," has been a success. It follows that not only the patient but the physician and the public are benefited. The patient is benefited by the fact of being placed in the hands of a physician who is not only a physician but a moralist. The physician is benefited by the fact of being able to treat the patient with the most skillful and the most successful of all the means at his disposal. The public is benefited by the fact of being able to place the patient in the hands of a physician who is not only a physician but a moralist.

the State and county institutions were no better governed. The superintendents and subordinates were not selected on account of their fitness for the positions, but were appointed through political influence. I am pleased to say that at the present day the public and private asylums in New York State are equal to, if not better than, any others in the world.

The State commission does not grant permission to any individual to conduct a private asylum unless it is in charge of a physician who has had considerable experience in the treatment of the insane and who is well qualified to manage such an institution. These asylums are licensed for a limited number of persons in order that each may receive proper attention and have proper accommodations. The food must be of the best quality, and sanitary requirements are very exacting. Asylums are in the treatment of the insane what hospitals are to the sick, in fact they are a combination of hospital and home.

The insane are very cunning; they often know that their ideas differ from those of the persons with whom they converse; that they are alone in their belief—and for that reason, when questioned by physicians or others, will not answer according to their belief, but in accordance with the ideas of the questioner. At home the family feeling toward them is, well known to them, they will refuse to do as those in attendance may request, and will impose upon the good nature of their relatives. If the physician recommends certain work for them to occupy their time and to divert their minds from the subject of their mania, or if walks at certain hours of the day are advised, they feel that their movements are closely watched, and it is useless to try to convince them to the contrary. If these simple recommendations can not be carried out at home, how can any systematic treatment be given without the use of force? And the continued use of force with the insane so affects the nervous system as to render ultimate recovery a doubtful question. The principal rule to be followed is that the insane must be led and not driven, and the only place in which this can be accomplished is in a properly governed asylum.

The estimate entertained of the insane by the public renders it an enemy to asylums. They are supposed to be a wild set confined in a building like wild animals, who are restrained at night by chains or by some other means; that the mad and the violent are placed together, and that the latter are allowed to assault upon others when they approach them.

It should be considered that the insane are classified; that as suffering as insanity they are placed in a receiving ward for several days in order that their form of insanity may be studied by the physician in charge. They are then transferred to wards not made for the treatment of their special mental disorder, and are then, improve, they are gradually returned. The entrance order of the latter category is the person, as I have stated, presents the form of insanity of many of the so-called wanks who are allowed to roam at large. Their relatives think they are not fit to go to the asylum because they suffer no violence to the family and do not break furniture or burn clothes, but only

go about ventilating their hobbies whenever they can find a listener. More harm has come from this class of people during the past few years than from any other class of insane. The attacks upon a banker in New York and upon the late mayor of Chicago are still fresh in the minds of the public. In both cases the progress of the disease was slow, but so well marked that the peculiar actions and ideas of the individuals were known to their relatives and friends months prior to the commission of their crimes. These are but a few of the many cases in which home treatment was used, and the relatives of these individuals are responsible for the delayed action. Immediately after the commission of the above-mentioned crimes applications made by persons for the committal of relatives to insane asylums in Brooklyn were very numerous, and the examiners for the Department of Charities and Corrections made commitment papers for thirty-five persons in one day and twenty-seven in another. This proves that, but for the crimes referred to, these people would have been allowed by their relatives to roam the thoroughfares as usual had they not been brought to their senses by these outbreaks.

It must not be forgotten that insanity is often communicated from one member of the family to another when there is an hereditary basis for its development, and in such families very prompt action is necessary. Two cases illustrating this came under my notice as examiner of the insane. One was that of a young widow who had been living alone for six months in a small shanty. During this time she became affected with paranoia, and gradually grew worse until her neighbors summoned a sister to care for her. This sister, a quiet, intelligent girl, took charge of the insane woman for four weeks, when she also became the subject of the same form of insanity, and both were committed to an asylum. Applications have been received at the department from mothers to have their daughters committed to an asylum for the insane, and when they have been visited by the physicians at their homes, and the mothers questioned as to the history of the case, it has been found that the mother had more delusions and hallucinations than the daughter whom she wished to have committed.

A CASE OF SCROFULODERMA VERRUCOSUM.*

By CHARLES E. NAMMACK, M. D.

This case presented was brought to my class at the New York Hospital, Out-patient Department, by Dr. Dewitt C. Rose, for conference regarding its nature and treatment, with the following history: Child is seventeen months old, one of twins, and still a nursing. The other twin died at fifteen months of broncho-pneumonia. Both were delicate since birth. No history of syphilis or tubercle obtainable in family. This child presents the clinical history and present physical condition characteristic of the disease, which need not be detailed here. The unusual feature of the case is the presence of skin lesions, the exact counterpart of which the writer has not before en-

* Read before the Section in Pediatrics of the New York Academy of Medicine, April 10, 1894.

MEERWETHER, FRANK T., First Lieutenant and Assistant Surgeon.

The leave of absence granted on surgeon's certificate of disability is extended two months on surgeon's certificate of disability.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service, for the Four Weeks ending July 21, 1901.*

CARMICHAEL, D. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. July 20, 1894.

GLENNAN, A. H., Passed Assistant Surgeon. To inspect un-
serviceable property at Delaware Breakwater Quarantine.
July 6, 1894.

BRATTON, W. D., Passed Assistant Surgeon. To report at
Bureau for temporary duty. June 27, 1894.

KINGMAN, J. J., Passed Assistant Surgeon. To proceed to Cape Charles Quarantine for special temporary duty. June 30, 1894. Designated to represent the Department at the International Congress of Hygiene and Demography. July 9, 1894. To inspect unserviceable property at Boston, Mass. July 17, 1894.

GEDDINGS, H. D., Passed Assistant Surgeon. To report at Bureau for temporary duty. July 20, 1894.

WERTENBAKER, C. P., Passed Assistant Surgeon. To proceed to Delaware Breakwater Quarantine for special temporary duty. June 30, 1894.

YOUNG, G. B., Passed Assistant Surgeon. To inspect quarantine stations. July 20, 1894.

Promotion.

BROWN, B. W., Assistant Surgeon. Commissioned as Passed Assistant Surgeon. July 19, 1894.

correct until the next Friday, as she rested easy and did well up to that time.

On Friday afternoon I was called again and on my arrival found her in labor. This time I delivered her of a well-formed healthy-looking living child. I turned the child over to the nurse and gave my attention to the third stage of the labor, and soon removed the placenta. I found a healthy placenta of average size, with both cords attached to the one placenta. The woman made an uninterrupted recovery and the child lived and thrived for a week. When it was a week old it died from her overlying it in bed.

As Dr. Callahan says in his report of a case, there are not many of these cases recorded, and, as this is the only one of the kind that has come under my observation, I have concluded to report it. The points of interest that I would call attention to are: 1. The length of time between the births of the two children, full ninety-six hours having elapsed between them, and the mother's perfect ease and comfort during the time. 2. The fact that the cord remained in the vagina during all this time without any evil effects. Every precaution was taken to keep the parts clean during this time, but her surroundings lacked great deal of being as good as they ought to have been; still there was no infection whatever. It was a very interesting case to me, and I trust the record of it may be of some interest to others.

S. C. BALDWIN, M. D.

S. C. BALDWIN, M. D.

HYSTERICAL APOPLEXY.

McKEESPORT, *July 18, 1894.*

To the Editor of the New York Medical Journal:

SIR: In your issues of June 26th and July 14th are reported cases of so-called hysterical apoplexy. I wish to mention one which seems to me to be in the same line.

On June 8th of this year I was called to see a patient who had fallen in a convulsion on arising in the morning. She remained in a semi-comatose condition for eight days. On the second day there developed hemiplegia of the left side, both motor and sensory, which remained for nine days, when improvement rapidly took place, and in two weeks from the convulsion she was perfectly well. The patient was forty-five years old, a married lady. Two years before, she had had a similar attack. There were no evidences of syphilis, arteriosclerosis, or any valve lesion. This case seems to me to have been one of hysterical origin.

F. T. NASON, M. D.

F. T. NASON, M. D.

Letters to the Editor.

THREE BABIES IN THIRTEEN MONTHS, BORN ON THREE
DIFFERENT DATES.

HUTTEN, MONI, *Jah. 11, 1867.*

The Editor, The New York Medical Journal.

Sue: On March 13, 1894, I attended L. M., a colored woman, in her 50th confinement. She was a large, powerful woman, and their issue were both tedious and severe. As is often the case in early confinement, she stated that this would be her last.

On Monday afternoon, April 19, 1886, I was called to attend the young woman and found that she had just been delivered of a well-formed male foetus, which, I think, however, was dead.

On numerous occasions, I found the sand gradually changed, often transformed my thoughts into the negative. I didn't think that the sand was good, but that the sand was "unpleasant" and even "so-so" and "bad." After pulling themselves out of the sand, I was shocked to find that there was something about sand and me. In fact, I thought the sand was "evil" and "wrong," seeing how we tried to "control" and "tame" the sand outside the pavilion and "tamed" it had been made to feel "treated" to have better things, and soft beds.

It might well be the case that the fact that the fish are not eating any of the pieces are eating themselves and that they are in better shape. I will be showing people that one would expect the same to happen in fish farms. The fish are not eating any of the

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 2, 3, and 4, 1894.

The President, Dr. WILLIAM T. LUSK, of New York, in the Chair.

[illegible]

The Abuse of Trachelorrhaphy.—Dr. WILLIAM R. PRYOR, of New York, read a paper on this subject. He first described the various degrees of laceration of the cervix usually found, and then dilated at some length upon their causes. As to the effect of laceration upon the cervix, it was merely a mutilation and could not produce the train of symptoms usually attributed to the accident. The cervix was only a sphincter muscle and its impairment could not be the cause of sterility, which was so often held to it down. Prolonged labour, were the cause of the subinvolution, and not the separation of the cervical fibers. In

was true that cancer was becoming commoner, but, when studied histologically, it was not found to be due to tears in the cervix, but to embryonic tissue in the organ. The operation of trachelorrhaphy he would limit to cases of danger from hæmorrhage and to those in which the tear extended up to the vaginal junction. In such cases the insertion of sutures was a surgical procedure called for. Where there had been extensive tears and there was considerable hypertrophy with deformity, amputation was the operation of choice. The erosions so frequently found, and said to be due to lacerations, should be treated in the same manner as such conditions when found in young girls. He did not favor the sewing up of the cervix, because it did not leave a wide enough canal for future labors.

Dr. H. T. BYFORD, of Chicago, agreed with the speaker entirely and said that there was altogether too much indiscriminate repairing of cervixes. If an operation was necessary and deformed cervix, Schröder's offered the best results. Where the deformity was great and eversion and erosion were considerable, sewing up would not cure the trouble. Where the tear was deep, sutures should be immediately introduced and the parts drawn together to prevent hæmorrhage and subsequent sepsis.

Dr. BALDY thought that the disease found after lacerations in the majority of cases was not so much due to the injury as to irritating secretions that passed over parts not accustomed to such exposures. For this reason he was in favor of closing up such tears and getting primary union. When it could be done under improved methods, lacerations which caused eversion and erosion should be repaired.

Dr. NOBLE thought that it was a striking statement that one of the speakers had made, that it was normal for women to have lacerations and that they were always present in women who had borne children. He had seen many cervixes from the condition of which alone it would have been impossible to tell whether a child had passed through or not. Some one had said that it was uncommon to find cancer among the colored women in the South. Recent statistics disproved this statement and showed that the negroes had cancer in just as large proportions as the white women. It was a fact that the women who had cancer were usually mothers of large families. The speaker agreed with Dr. Pryor that it was wiser to do Schröder's operation than to do trachelorrhaphy. The lacerations from repeated operations form a very small number as compared with the cases that could be treated otherwise.

Dr. GEORGE L. HARRISON, of St. Louis, thought that it seemed a general fallacy, as he concluded by the extent of injury and the pathological condition found. If the rent extended up to and beyond the os, the cervix was not to be sutured. It would be required. He did not believe that women could do without trachelorrhaphy. He had seen many that were not.

Dr. GEORGE mentioned that trachelorrhaphy had been done after the second, third, fourth and fifth child. In many cases there was no doubt that the cervix had been closed to such an extent that delivery was not free. Such a condition could not be cured by separation of the cervix, and he had afterwards been obliged to operate for prolapser. The treatment had been that of cure of all the same disease, and the consequence was that the cervix had entered into the operation and must have had trachelorrhaphy. He did not think that lacerations were a result of injury. It had seemed to him that it showed the cervix to have been too small originally. To sew up such a cervix would be to put in an abnormal condition. Where hypertrophy and hypertrophy were present much improvement could be expected from the use of the cautery and the operation of prolapser and cure.

Dr. Pryor said that those ought not to be placed in gynæ-

cology for trachelorrhaphy. Much better permanent results could be accomplished by so many other means.

Fatal Nausea and Vomiting of Pregnancy.—Dr. EDWARD P. DAVIS, of Philadelphia, read a paper with this title. He described in detail three fatal cases of nausea and vomiting of pregnancy. The first patient had been treated for chronic gastritis previous to coming under the author's notice. She had had continuous vomiting and was very much emaciated. A tampon was put up to the cervix and every effort made to nourish by the rectum, but the patient died from exhaustion. Before her death purpuric spots made their appearance. The size of the uterus compared with that of the second month of pregnancy.

In the second case there were prolapse and antelexion of the uterus at the end of two weeks of pregnancy. There was intense vomiting, with nausea with considerable straining and retching. The diet was regulated, but the patient grew worse. At the end of the fourteenth week it was found that the body of the uterus was antelexed and the fundus impacted behind the pubes; this was corrected, but the condition did not improve. The os was then dilated, with slight improvement. It was decided to hasten delivery, and this was accomplished without much trouble and with very little hæmorrhage. Subsequently the patient attempted to rise and died from syncope. The autopsy showed considerable fibrous tissue in the cervix posteriorly and anteriorly. The uterus, tubes, and ovaries were normal. The blood remained fluid and stained peculiarly. Two retention cysts were found. The points of interest in this case were the dense tissue found in the cervix, the retention cysts, the tenderness of the tissues, the hæmaturic staining, and the signs of fatty degeneration.

In the third case the patient had suffered with severe sub-sternal pain, nausea, and vomiting of coffee-ground-looking material. The uterus was not impacted, but sharply antelexed. Everything possible was done, but the patient died from exhaustion.

In a summary of the symptoms of this very fatal condition Dr. Davis laid special stress upon that of the coffee-ground vomiting and the sub-sternal pain. The nausea and vomiting of pregnancy were dangerous by reason of their being apt to cause pernicious anemia. A case showing signs of obstinacy in yielding to treatment should be treated promptly by modern surgical methods.

Dr. REYNOLDS had found in such cases that there were usually structural alterations, and it was his practice to induce abortion at once. If the vomiting was too persistent there was a necessity of using a Hare's catheter, and he thought it was best not to wait for that time. When the absorbent system had lost its power of supplying the general system it had no chance to help in these cases, and it was better to perform. Where time had been lost in palliative measures abortion only hastened the fatal end. Great judgment must be exercised where the expectant plan was adopted.

Dr. W. C. WEAVER, of New York, said that he had found steel dilators had given great relief in such conditions as those described by Dr. Davis. He treated the vomiting by giving the absorbent and stomach rest by placing around a perforated condition present in the stomach and the uterus. He had found that it was not so much the vomiting and the nausea that was the trouble, but it was also the distention and the pressure of the stomach. It should be treated by the use of the catheter.

Dr. M. D. MOORE, of Nashville, thought that the condition of the fundus of the uterus in these cases was a point. He described the history of a case in which a woman who had been married had nausea and vomiting of coffee-ground-looking material. She had been in bed and condition had suffered from nausea. She had been

amination revealed a fibroid which seemed to have been the starting point of the trouble. Where patients were found in a bad way from persistent vomiting they should be delivered at once.

Dr. JEWETT had seen many cases, but had been unable to find any pathological condition to account for the symptoms. There might, however, be histological changes. Great benefit could be derived from dilatation, for it was both sure and safe. Patients should not be allowed to go on too long before radical measures were adopted.

Dr. A. PALMER DUDLEY, of New York, said that it had been his misfortune to have five cases of extremely obstinate vomiting. There was no doubt that the condition was a neurosis, but it was in the state of the generative organs that the cause must be looked for. It was his practice to pack the vagina and treat whatever diseased conditions were found. Painting the cervix with cocaine had been beneficial, also its administration internally. Good results had been obtained by the internal administration of monobrominated camphor.

Dr. DAVIS again wanted to impress upon the meeting the fact that if nausea and vomiting came on in a pregnant woman with substernal pain and the ejection of coffee-ground fluid from the stomach, the symptoms were dangerous and called for surgical interference.

Retropertitoneal and Intraligamentous Myomatous Tumors of the Uterus and Annexa.—Dr. WILLIAM H. WATHEN, of Louisville, read a paper on this subject. He said that, while parovarian cysts and retropertitoneal myomata of the uterus and its muscular processes had nothing in common in their etiology, he would include both kinds of tumor, because the technique of the operation for their successful removal was practically identical. After reporting five illustrative cases he said that no one should attempt the removal of intraligamentous or retropertitoneal tumors who was not familiar with the normal relations of every pelvic and abdominal organ, and the relations that these tumors might sustain to surrounding tissues; otherwise he would be at sea, and the immediate and subsequent results of his work would be bad. He should know that these tumors were mainly supplied with blood from the ovarian and uterine arteries, and that their successful enucleation depended largely upon a correct ligation of these vessels. The dangers of the operation, which should be anticipated, were: 1. Hemorrhage from separated adhesions, from the capsule of the tumor, from the denuded surface of a myoma, from injury to the spermatic and uterine arteries, the iliac arteries and veins, and the inferior vena cava. 2. Wounding the ureters, the bladder, or the intestines. The causes of death were hemorrhage, shock, and sepsis. The results of the operation depended mainly upon controlling hemorrhage and upon successful enucleation. The incision should be so shaped as to be readily applied to the part of the separated capsule, and the surface of the tumor should be comparatively smooth, and the edges so dressed as not to cause hemorrhage by cutting through the thin part of the wall of the uterus. The lack of proper incision might be corrected by tamponade, had been the case in many instances of considerable anastomosis, but the author believed that in the future, with skill, he expected to be able to do the same thing without.

If hysterectomy was necessary, total extirpation was preferred, but if it was not, it was necessary to preserve the uterine artery and remove the tumor. After enucleation the cavity ought to be packed. He made it his habit to cut the uterine artery to the tumor and to the uterus, before that part of the tumor that supplied the tumor out of the ligament and the ovary was removed. They should be tied close to the cervix to prevent injury to the uterus. The patient must be in the Trendelenburg position, so that the different structures and their relations might be

seen as the operation was proceeded with. He said there was no fixed opinion or uniform practice as to the treatment of the sac cavity. It was drained through the vagina or through the abdominal wall, with or without suturing the capsule to the abdominal wall, or it was not drained at all. If hemostasis had been nearly perfect and the operation aseptic, drainage was not necessary, and then in total extirpation the vaginal vault should be closed by interrupted sutures.

Myomectomy as a Substitute for Hysterectomy.—Dr. E. C. DUDLEY, of Chicago, read a paper on this subject. After giving the history of the various operations for removal of growths in and around the uterus, and discussing the relative value of the various methods, he said that his objection to the operation of hysterectomy was that it removed from the woman her generative organs. It was for this reason that an operation which had for its object the removal of myomata from the uterus with the preservation of that organ had been devised by him. He described his operation in detail, giving the histories of twenty-five operations for various degrees and sizes of tumors, with not one fatal result. In some of the cases he had been obliged to remove the annexa for disease. He did not see, however, how, if the appendages were so diseased that their removal was necessary, there was much use in retaining the uterus. There were many cases where the uterus was the seat of a myomatous growth and the tubes and ovaries were in a healthy condition.

The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids.—This was the title of the president's address. He gave a historical review of surgical procedures for uterine fibroids, and said that, drawing his conclusions from statistics and from personal observation, he was not in favor of indiscriminate removal of the uterus, or even of myomectomy, until every other measure had been given a lengthened trial. Those present had all seen myomata that had remained stationary for years or had disappeared spontaneously after pregnancy or after curetting. If they were small, the Apostoli method seemed to offer the best results. Palliative measures were often followed by great improvement where, if radical treatment had been adopted, much unnecessary suffering and harm would have been done. Myomatous structures thrived upon excessively nourished tissues, and it was to the correction of such tendencies that our attention should be directed. It was our duty, as far as possible, to protect the woman from the loss of her reproductive organs, a condition which would make a sensitive creature feel an inferiority. He was in favor of the old method of dilating the cervix and drawing down the tumor through that opening. Abdominal hysterectomy should only be done where there were many adhesions present or multiple tumors or other complications, but where the tumor was single, efforts should be made to remove it through the cervix. Drawing from statistics again, it was his opinion that vaginal hysterectomy should have the preference over abdominal hysterectomy. Some of the disadvantages of the suprapubic method were the disfigurement of the cicatrix, the liability to hernia, adhesions of the omentum, the dangers of the exposure of the intestines to the air, and shock. If the tumor exceeded the size of a child's head, then it had perhaps better be removed from above. Where oophorectomy alone was performed for the relief of certain symptoms it was sometimes successful, but oftener the patients returned suffering as much as they had originally. Where the disease was of considerable extent, the complete or partial removal of all the organs involved would be the wiser plan. All pedunculated growths should be tied off and removed. Large cysts and multiple tumors and cysts could be operated upon from above, and hysterectomy could be done if found necessary. The proper

treatment of the stump was still not a settled matter; the most appropriate treatment seemed, however, to be the method of election.

(To be continued.)

Reports on the Progress of Medicine.

GENERAL SURGERY.

By M. L. FOSTER, M.D.

ASSISTANT SURGEON OF THE MASSACHUSETTS EYE AND EAR HOSPITAL.

Surgical Treatment of Pulmonary Cavities.—Dandridge (*Journal of Surgery*, February, 1894) deduces the following conclusions from his study of this subject:

1. A certain number of lung cavities can be successfully dealt with by incision and drainage.

2. Tubercular cavities in the lower portion of the lungs—if single and superficial, and the general condition of the patient permits—should always be opened. Cavities at the apex should only be opened where free and persistent foetid expectoration is present and has resisted treatment, and the rest of the lung is not involved.

3. Abscess, gangrene, and hydatid cyst should be opened and drained whenever they can be located.

4. Closure of the pleura should be present before evacuation of a cavity is attempted.

5. In cases of pyopneumothorax the fistulous tract should be explored, and any cavity freely laid open by the cautery.

6. Cavities that have been opened are best treated by packing with gauze, preferably iodoform.

7. The further careful trial of such agents as iodoform, chlorine gas, and chloride of zinc is desirable to determine as to whether the tubercular infiltration may not be modified by them.

8. It is very desirable for the further extension of surgical interference in pulmonary cavities that the means of locating such cavities, and of determining their size and the exact character of the tissue that overlies them, should be perfected by further study, and for the accomplishment of this the surgeon must ask the physician.

Entero-anastomosis for Malignant Stenosis of the Digestive Tract.—F. H. Markoe (*ibid.*) makes the following remarks about this operation, which is resorted to only as a palliative to relieve unnecessary suffering caused by an inoperable disease and to prolong life:

As a result of experience we endeavor to operate as early in the disease as possible, or, if doubt is already present, postpone interference until, by means of systematic lavage with carbolic paste, supplemented by normal nourishment, the general condition improves.

We have also learned: (1) that the use of the intestinal speculum must be large on account of the tendency to contract; (2) that in case of the stomach it should be as near as possible to the greater curvature and near the fundus; that the pylorus is not only as far distant as possible from the disease, but at the same time in the best position to allow for the passage of the contents of the stomach into the intestine; (3) that the jejunum about three inches from the pylorus is the proper portion of the intestine to approach, and that its opening should be placed midway between meso- and antimesenteric extremity; (4) that in the operation the loop must be so arranged that its peristaltic action corresponds with that of the stomach, so that the rate of motion seems to form a stream which will regress on failure

possible, that of the different anatomical layers, rather than through the medium of artificial aids; (6) that, as in all intra-abdominal operations, our manipulations must be so performed as to favor to the slightest degree ultimate adhesions between adjacent structures."

Excision of the Gasserian Ganglion.—Eschridge and Baker report (*Ann. Jour. of the Med. Soc.*, March, 1894) a case of neuralgia of the right cranial nerve of sixteen years' duration in which the three divisions of the Gasserian ganglion were removed with a fatal result. The operation employed was Rose's, as follows: An incision is made through the skin from above the zygomatic arch near the eye backward nearly to the ear, then downward in front of the ear and along the posterior edge of the lower maxilla to near where the facial artery crosses it. The flap thus marked out is dissected forward and stitched to the skin near the mouth. The zygoma is then exposed and drilled, two holes near the front and two near the back part of the arch; the arch is then sawed between each of these pairs of holes, and with the masseter muscle is turned downward. The coronoid process of the lower maxilla is then exposed and divided and the temporal muscle turned upward. The internal maxillary artery is then sought for and the external pterygoid muscle is removed from the great wing of the sphenoid so as to expose the foramen ovale. A button of bone is then removed with a trephine anterior and external to the foramen, and the ganglion is searched. The opening in the bone can be enlarged with rongeur forceps if necessary. Rose recommends to reach the ganglion from behind, if possible.

Dr. Baker says the operation has been performed only twelve times—six times in England and six times in this country—with only one fatal case in England and one here.

Gastrostomy.—Caird (*Edinburgh Med. Jour.*, February, 1894) considers the operation introduced by Witzel, of Bonn, to be the most satisfactory plan for performing gastrostomy, and gives the following description:

The patient is anesthetized and the customary antiseptic precautions are observed. The usual incision is made, the rectus split along the course of its fibers, its sheath and the peritoneum opened. The stomach is then sought for, seized by the fingers, and a portion of the anterior aspect, as large as the palm of the hand, is pulled out of the wound and packed around with sterilized gauze, moist and warm. A spot is then selected near the lesser curvature, free from vessels, and a small incision about a quarter of an inch long is made into the stomach. The surgeon has in readiness about two feet of red rubber tubing, in diameter equal to that of a drawing pencil, and slips about an inch of it into the stomach through the incision which it accurately plugs. Should there be any excessive bleeding, it may be arrested by catgut suture, which contracts by the action of gastric juice. Care must be taken to wipe away any fluid that may escape from the stomach. The tube now lies across the stomach toward the greater curvature and has to be secured in position so as to form a sort of artificial esophagus. This is done by raising a fold of stomach on each side of the tube with a series of interrupted silk ligatures, secured about one inch apart. Bury the tube for about two inches of its length in the folds. Twice three sutures are inserted, the middle suture of the tube about 1/2 of an inch removed from the stomach, and the two further out. A single suture, not too long, is inserted over the incision and is loosely secured about an inch or two in front of the first ligature. On the distal end of the tube, near the stomach, the tube is secured to the abdominal wall. The stomach is now removed and secured to the abdominal wall. The tube is secured to the abdominal wall by being passed through the folds of the greater omentum, secured to the stomach by the action of the tube. The operation is performed by the abdominal wall, the stomach is secured to the abdominal wall by being passed through the folds of the greater omentum, secured to the stomach by the action of the tube.

tissues should be drawn well upward and downward before the pads are applied.

Blastoma.—This title has been given by Dr. Snodgrass (*Bernes' lam. Med. Review*, December, 1895) to certain obscure and strangely constituted tumors which refuse to fall into any of the recognized groups, but agree in being the offspring of fetal structures obsolete in extra-uterine life. The development appears wholly spontaneous, as the natural outcome of some inherent force or law of development, while the non-congenital cancers of the adult are never found without the previous operation of one or other of certain recognizable antecedents. These rare formations exemplify a general tendency pervading all the organs derived from the Wolffian bodies, Müllerian ducts, and germinal epithelium, the kidneys, uterine appendages, testes with their gubernacula, vesiculæ seminales, epididymides, prostate, vasa deferentia, and cortical part of the adrenals. Less conspicuous are the organ of Giraldu, the vas aberrans of Haller, the hydatids of Morgagni, and the paro-phoron. The rhabdomyoma of the infantile kidney is the most malignant blastoma. Huge masses containing striped muscle blended with ordinary sarcoma tissue grow rapidly and prove fatal with metastases in lungs, liver, heart, peritoneum, etc. The fact that these are commoner in the male sex is explained by the further devolution of the Wolffian body and its correlatives in males. Congenital dermoid tumors of the ovary are much commoner than is usually supposed—ten per cent. of ovarian cysts being wholly or partially dermoid, according to Greig Smith. The composition of these malignant dermoids is peculiarly complex and puzzling, inasmuch that the special term "oophoroma" has been coined for them. Cell elements with little organization or regular arrangement prevail in the oophoromata of fetuses or very young children; toward puberty a higher organization is found, the cells being grouped in alveoli and various formed tissues being present; later on are large cysts with the usual heterogeneous contents. The thymus, parotid, and soft palate are not unusual sites for these growths. The polymorphism of malignant tumors springing from the thymus is explained by their development in two portions, one being composed of small lymphoid cells, the other of glandular epithelium. In the parotid, groups of embryonic cells pertaining to one or other of the branchial arches persist and prove the nucleus of future tumor formation; relics of Meckel's cartilage account for the presence of that tissue. Bone, striped muscle, gland acini, embryonic connective tissue, and nervous tissue may also occur. The soft palate is prone to involve similar residua; hence dermoids, angiomas, encapsulated masses of epithelium, and epithelial pearls. These often pass as "round-celled sarcoma," an ambiguous term including a variety of neoplasms, or as "cysts" of more common, as "adenomas." An important section of embryonic inclusion cancers is constituted by the retinal gli-

Of particular local importance which more easily passes the test of future formation may be listed the primary body, primary and the remains of the an obsolete embryonic cavity. The subcutaneous, mesenteric passage post and post cavity, the main and secondary duct and subcutaneous duct. There are probably no unobstructed portions of body or have the conduct tissue common to several of the main characteristics of the tissue identified with other mesodermal structures.

It is probable, since concentrated systems of land "banks" may persist throughout the century, that the most notable feature may be a certain amount of growth everywhere with formation of a large mass. In a third case the most notable is a systematic lack of growth in a region that has a very different type of land use.

The characteristics by which blastomata may be recognized and differentiated are thus summed up:

(a) Demonstrable origin from organs or structures which persist as fetal remains throughout extra-uterine life—*e. g.*, the thymus, pineal, and pituitary bodies.

(b) Origin from vestigial structures, which normally undergo obliteration to a greater degree than the preceding, yet always have inconspicuous traces. Of such are the parovarium, Giralde's organ, etc.

(c) Origin from vestiges which but rarely persist—*e. g.*, dermoids, the "coccygeal tumor," with other derivatives of the six fetal canals, the umbilical "cylindromata" developed from a patent urachus.

(d) Anomalous tumors, which appear at the site of the branchial arches, or other localities affected by the ordinary dermoid, and betray an embryonic origin by the possession of normal tissues in an abnormal situation. The familiar mixed tumors of the parotid are the best instance, and similar ones are less often seen in the testis, mamma, rectum, etc.

(e) Those malignant lesions of early child life, which not seldom have commenced *in utero* and are bilateral—*e.g.*, rhabdomyoma, retinal glioma, ophoroma. No form of cancer simultaneously attacks in the adult corresponding organs on opposite sides.

(f) Certain obscure growths, especially about nerve centers, probably own a congenital source and may be provisionally included in the group. Among these count the "plexiform sarcoma" of Billroth, with some, at least, of the tumors currently described as endothelioma, psammoma, columnar epithelioma, many cysts, sarcomata, angio-sarcomata, etc.

(g) The great majority of malignant tumors in young children, if not indeed all, must be referred to the class blastoma. The kidneys, bladder, ovary, and genito-urinary tract in general furnish the most familiar illustration. Sometimes the organ attacked is, in the adult, specially exempt from cancer—*e. g.*, the adrenals, prostate, and vesiculae seminales.

The morbid anatomy varies widely. The most distinctive mark is a curious and perplexing *mélange* of dissimilar tissues—*e. g.*, of carcinoma structure with that of sarcoma, of tubules or cysts lined with cubical epithelium, with areas of heterogeneous cell-infiltration, of glandular acini or follicles, with connective-tissue structures, cartilage, fat, bone, sarcoma, and gland tissue with muscle. Usually there is a tendency to cyst formation.

He considers that the theory of autotytic cell reversion derives considerable support from the career of this very anomalous group of neoplasms.

Resection of the Inferior Maxillary Nerve.—Quémé (*Gaz. des hôpitaux*), 1894, No. 51 describes a rather complicated method of performing this operation. It is a combination of Kraske's and Ross's operations, and is claimed to unite the advantages of both.

[illegible]

Transplantation of Skin.—Schnitzler and Ewald (*Ctrbl. f. Chir.*, 1894, No. 7) maintain that it is unnecessary to remove the granulations from a granulating surface before transferring a skin graft to the surface. On the contrary, after curetting such a surface and applying the grafts, granulations must again form before the graft will become attached, and, if the graft be placed upon the granulations themselves, a good result can be expected not less surely than if the method recommended by Thiersch be followed. The want of a sepsis is marked, as the granulations can not be disinfected without injury and hemorrhage; but the result shows that careful asepsis does not play the important rôle here that one would suppose.

Another advantage of this operation is that it can be performed under local anesthesia of the part whence the graft is taken. The writers prefer the local anesthesia produced by freezing with ethyl chloride to that by subcutaneous injection of cocaine. The skin is quite hard and easily cut, there is no swelling or stretching, and the grafts remain smooth and thaw either on the knife or on the surface of the wound itself. No injury from the freezing has been noticed.

Hydrocele.—Neumann reports (*Fortschritte der Medicin; Ctrbl. f. Chir.*, 1894, No. 5) that he has treated six cases of hydrocele in the following manner with good result: Evacuation with trocar and cannula. After the fluid had escaped, the cannula was passed somewhat upward and retained in position by a compress for two days. In all the cases agglutination of the walls of the sac resulted in from seven to nine days.

Wound Drainage and Pressure Bandage.—Kronacher (*Wochenr. f. Chir.*, 1894, No. 2) recommends the combination of drainage with pressure first advocated by Marc Sée. An India-rubber drainage-tube introduced at the lowest part of the wound is provided with a strong silk thread near its upper end, which is brought out beneath the dressing applied over the wound. The ends of the thread are fixed in place with collodion, and a small bandage placed over all. After two to four days the small bandage is removed and the tube drawn out from the wound beneath the pressure bandage by means of the silk thread. A few turns of bandage are then placed again over the dressing.

Miscellany.

Biniodide of Mercury as an Antiseptic.—The *Hospital* (see July 7th) publishes an article on this subject by Mr. A. Hanriot. From a remark that among the many advances in the art of surgery in recent years the management of wounds finds a prominent place, and that one improvement in this direction is the use of antiseptics. When it was acknowledged that antiseptics were their saps, and the scrubbing brush was rejected, there arose an army of germicides, each of which has a share of the credit of being either antiseptic, until now there seems to be a tendency to return to carbolic acid.

Perhaps the antiseptic most generally employed is carbolic acid. Even so the value of carbolic acid is being questioned. There can be no serious doubt as to its antiseptic properties. According to Lister, it can not be used in a strong solution, for its action is proportionate to its concentration. In order to cleanse the skin before the bichloride can be used, it is necessary to use a strong solution of carbolic acid. The carbolic acid is used in a strong solution, and it is not possible to use a strong solution of carbolic acid in a strong solution of carbolic acid.

mate. This antiseptic, he says, has not received the attention it deserves, and many fail to appreciate its true worth, notwithstanding the fact that it is the most powerful germicide known at the present time. Biniodide of mercury dissolved in a solution of sodium iodide does not produce the unfavorable conditions that follow the use of the bichloride. Yet this fact is not generally known, for at a recent discussion, reported in the *British Medical Journal* for November 25, 1893, the opinion was expressed that the biniodide of mercury entailed the possible risk of iodism in addition to that of mercurialism. In the case of biniodide of mercury dissolved in a solution of sodium iodide, such a thing is impossible, as each is soluble in excess of the other. Thus the soluble biniodide of mercury does not, like the bichloride, form an insoluble albuminate, while the biniodide, unlike the bichloride, is very rapidly eliminated, and is not likely to give rise either to iodism or to mercurialism. Mr. Frere's chief reasons for calling attention to the biniodide of mercury dissolved in a solution of sodium iodide as a lotion for wounds are as follows: 1. It is easily prepared by the addition of a solution of potassium or sodium iodide to the liquor hydrargyri perchloridi of the British Pharmacopoeia until the precipitate which first forms is dissolved. This gives a solution (1 in 1,000) of biniodide of mercury in a solution of potassium or sodium iodide. 2. In all kinds of wounds the results are superior to any obtained with other antiseptics. 3. Its value is especially seen in scalp wounds, in which, under its influence, no suppuration had been observed. 4. It saves a great deal of time, trouble, expense, and anxiety to the general practitioner. After the wound is washed with the solution (1 in 1,000) it is sufficient to keep lint constantly moist with a solution, of the strength of 1 in 2,000, applied to the part.

A Method of Sterilizing Catgut.—At a recent meeting of the *Académie de médecine*, a report of which is published in the *Union médicale* for June 7th, the following method of sterilizing catgut was presented by Dr. Répin: The catgut must be perfectly clean and free from grease, which must be extracted by using ether or carbon sulphide brought to the boiling point in an extraction apparatus. From this is obtained a white inodorous product which rapidly swells in water, and is very flexible without being slippery. This product must be completely dried, as the slightest trace of water will cause its disorganization when the temperature exceeds 212° F. It is put into a sulphuric-acid desiccator, or it is subjected to a hot-air bath the temperature of which is brought slowly to 230°, at which it is maintained for an hour. The catgut is then placed in steel tubes filled with pure alcohol, and is kept in a digester at a temperature of 248° for an hour. The quality of the alcohol is not a matter of indifference. Watery alcohol, even if it does not contain more than one per cent. of water, exercises a destructive action all the more pronounced and rapid when the temperature is more elevated.

Catgut subjected to this process, says M. Répin, is not changed in any respect, either in its appearance or in its qualities; its resistance, measured before and after the sterilization, is not diminished and its elasticity is the same.

The author's experiments have convinced him that, at a temperature of 248° in pure alcohol, the most stubborn germs are completely sterilized. He has experimented with catgut taken from an animal affected with anthrax and submitted it to this process of sterilization, after which it was inoculated on three guinea pigs and not one of the animals presented signs of infection. This demonstrates, he says, that the sterilization of catgut by alcohol vapor under pressure and at a temperature of 248° is a method which can absolutely be counted upon.

Acute Poisoning with Medicinal Doses of Creosote.—In the *Gazette hebdomadaire de médecine et de chirurgie* for July 17th there is an abstract of an article by Zowadzki, published in the *Centralblatt für innere Medizin*. A woman, forty-two years old, being attacked with bronchitis, consulted a physician, who ordered creosote to the extent of eighteen drops in twenty-four hours, to be taken in six-drop doses. The patient followed the instructions and took six drops in milk three times. In short time she was taken with difficulty of swallowing, vomiting, and diarrhoea, and, as her general condition was growing worse, she entered the hospital. On examination, the first thing that attracted attention was the very pronounced odor from the patient's mouth. On the inner surface of the lips, on the velum palati, and on the posterior wall of the pharynx were to be seen white patches like those produced by a caustic, and surrounded with an inflammatory areola. The difficulty of swallowing was extreme, so that the patient could not even swallow liquids. Moreover, there was complete paralysis of the velum palati, which, together with the base of the tongue and the posterior wall of the pharynx, was at the same time anesthetic and analgæstic. There was no affection of the heart or of any of the other organs. Auscultation of the lungs, very difficult on account of the patient's feebleness, disclosed fine râles at the base of the right lung. There was no creosote in the urine, but it contained two parts of albumin in a thousand, and also hyaline casts. The temperature was 100.3° F., the pulse 87. For the next few days the local symptoms remained the same, but the collapse, already very pronounced at the time of the patient's entrance, grew more marked, and death took place in four days. At the autopsy an ulceration having the characters of a burn was found in the upper third of the œsophagus and another on the edge of the pylorus. The mucous membrane of the stomach and duodenum was injected, red, and covered with ecchymoses. There was acute parathyroiditis nephritis, also chronic degeneration of the hepatic parenchyma. There was vegetative endocarditis manifested on the mitral valve, with pneumonia of the right middle lobe and hyperæmia of the brain and its membranes. The author thinks that these symptoms and post-mortem findings indicated poisoning with creosote of a character identical with that described in the treatises on toxicology. It was evidently a case of idiosyncrasy, for an examination of the bottle used by the patient showed that the creosote had been pure and that the patient had not taken more than eighteen drops. With regard to the burns found at the upper part of the digestive tube, they are to be explained by the fact that the patient had taken the creosote in milk, which, as is well known, is not a solvent of creosote.

The Bite of a Venomous Spider.—In the June number of the *Entomologist's Monthly Gazette*, J. Davenport Paris, of the Entomological, New South Wales, publishes notes of a very unusual case of spider-bite. The case happened to him, in the month of Dec. 1880, and 1881. All of them in the month of March, and all of them in the month of June, were bitten on the palm while sitting in the shade. A venomous spider, however, I suspect that it is the same one. There was some local poisoning in the other palm, the bitten one was bitten on the palm of the hand. The spider was a large, hairy, of a brownish-yellow color. Therefore, I have a brief account of his third case:

31. It is worth to point out that according to Matuszewska-Jabska and her group of students there are two theory classes in training. It means that while sitting on the chair of theory, as the professor-student. He said that the situation at this time had been very bad. There is a hope that that will be better and the future part of this phase will be that there is a better connection with the practice. It is a pity that the last part of the training took that bad course. It had been intended

to the root of the penis, and thence along the groins on either side to the back. At about 11 p. m.—i. e., two hours after being bitten—he had felt a pain like “pins and needles” in his toes. This had increased in intensity and spread to his feet, to his ankles, and finally as high as his knees. At the same time the pain in his body had extended up the back and round the lower part of his chest, being like “a belt of prickling and tingling.” The pain had increased in severity, and been accompanied by great restlessness, so that he could not remain in any one position for many minutes; and in the early morning he had been unable to endure it longer. When the author arrived (at 5 A. m.) he complained chiefly of the pain in his feet and legs, especially his toes; and these parts were bathed in a cold perspiration. His temperature was slightly subnormal and his heart’s action was somewhat weak. The author administered a hypnotic to allay excessive irritability, and prescribed a mixture containing ammonium carbonate and digitalis. The pain continued with intermissions, probably caused by hypnotics, for forty-eight hours, and the perspiration, which had at first been confined to the lower extremities, gradually became general, and was very profuse, so as to soak through even the blankets of the bed. He went back to his office on the fifth day, though still feeling languid and tired; but for ten days after returning to business he complained of occasional darting pains in the legs and round the lower part of the chest. The profuse perspiration mentioned gave off a peculiar cadaverous odor, noticeable by the patient himself and his attendants. This was treated by frequent tepid sponging. The closet in this case, as well as in the two previous ones, was examined, and beneath the seat were found from twenty to thirty very small spiders and one or two large ones, of a dark color with a brilliant red spot, or rather streak, on the back—in fact, one of the *Lathrodectus* family.

Referring to the fact that the president of the Royal Society had stated in an address that spiders were probably not *always* venomous, and that this point required further elucidation, Mr. Parry says he thinks this is certainly the case, or these accidents would be more frequent. Also he points out that all his cases occurred in March, and that in all of them the spiders were accompanied by young ones. May it not be, he asks, that they are venomous only in the breeding season or when protecting their young? The poison, too, he adds, is essentially different from many other animal poisons, in that there is no tendency to produce coma or somnolence, but rather insomnia, pain, and restlessness—in short, the symptoms of an acute peripheral neuritis without the subsequent stages of paralysis.

[illegible]

DR. BRADFORD'S AND DR. LOVETT'S ARTICLE.



CASE I.



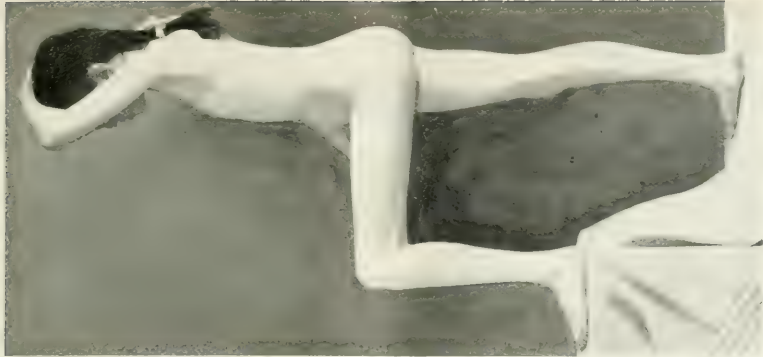
CASE I.



CASE II.



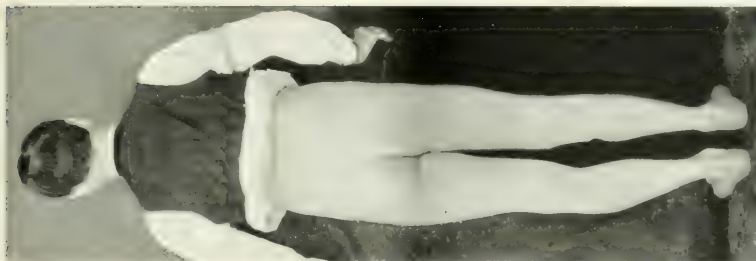
CASE II.



CASE X.



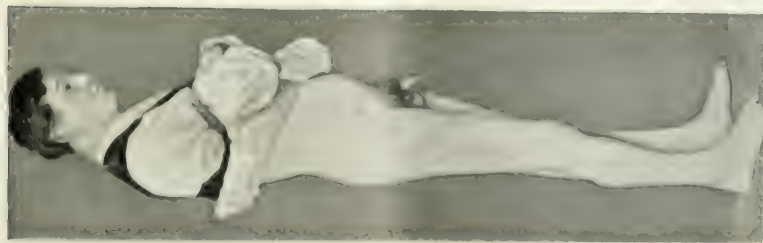
CASE X.



CASE III.



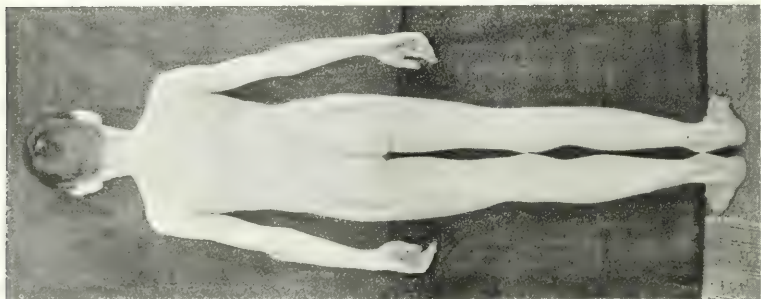
CASE III.



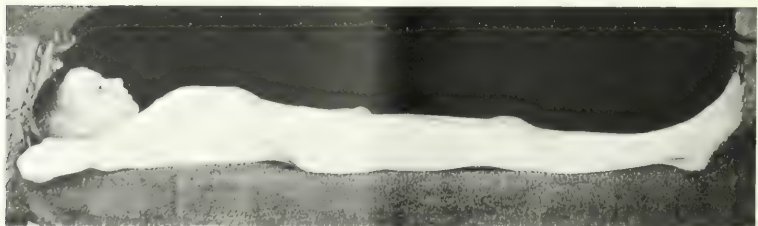
CASE III.



CASE XII.



CASE XII.



CASE XII.



CASE XII.

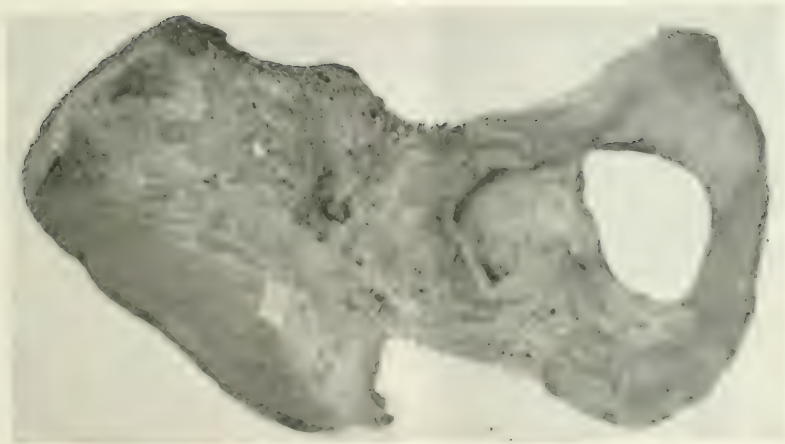


FIG. 1



FIG. 2.



FIG. 3.

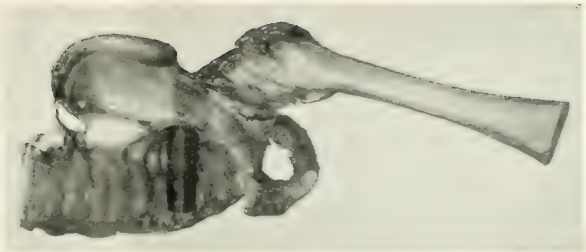


FIG. 5.

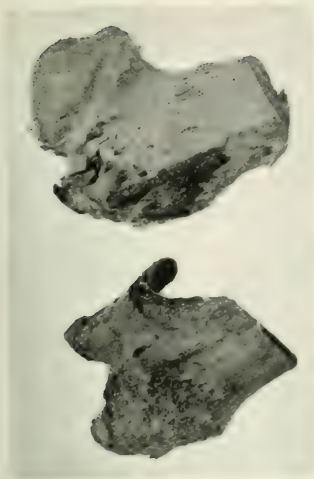


FIG. 9.

FIG. 10.

FIG. 4.

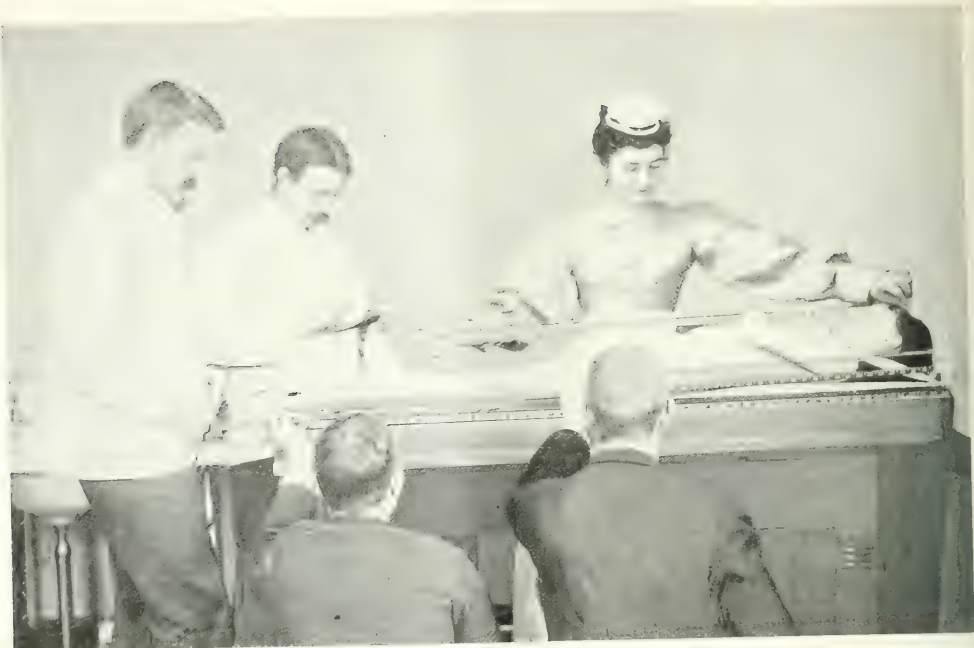


FIG. 7.



FIG. 8.

Original Communications.

DISTRACTION

IN THE TREATMENT OF HIP DISEASE.

By EDWARD H. BRADFORD, M.D.,

BOSTON,

SURGEON TO THE CHILDREN'S HOSPITAL.

AND ROBERT W. LOVETT, M.D.,

BOSTON,

ASSISTANT SURGEON TO THE CHILDREN'S HOSPITAL;
OUT-PATIENT SURGEON TO THE BOSTON CITY HOSPITAL.

THE object of this paper is to urge the employment of distraction as a means of treatment in certain conditions of hip disease, using the term distraction to indicate separation of the head of the femur from the acetabulum. It is not claimed that traction is the only form of treatment, or that fixation and rest are not also needed in certain stages, or that protection from jar is not essential.

Nor is it intended in this paper to discuss the question of the best method of applying traction, or to advocate any form of splint.

In offering a plea for efficient traction in hip disease, the purpose is not to present a new theory, but to urge for general adoption principles of treatment recommended many years ago by Davis, Taylor, Sayre, and others. An argument in favor of these seems superfluous to any one familiar with their advantages, yet it must be admitted that their efficient employment is not so general as is desirable. Various causes have limited the general use of thorough traction. One of these is, perhaps, the lack of pathological and experimental evidence in favor of the method. It is proposed in this paper to bring forward facts other than statistics which speak for the efficient use of traction in hip-joint disease.

If a number of pathological specimens of pronounced hip-joint disease are examined, it will be seen that the head of the femur has been crowded upward and backward. This in typical cases continues until the head of the femur is partially absorbed, the acetabulum enlarged, and finally a subluxation takes place, and the exaggerated pressure of the femur upon the acetabulum is diminished. After a while, in successful cases, ossification of bone follows, and ossification, with a resulting deformity—the deformity consisting of a shortened and subluxated limb with subluxation, as indicated by the fact that the trochanter is higher than the Nélaton line.

This pathological process characteristic of hip disease is illustrated in a number of pathological specimens in the Warren Museum, which are found to resemble each other in presenting the characteristic changes, varying only in the extent of the destructive process (see Figs. 1, 2, 3, and 4).

The change from normal traction to that marked in the upper portion of the acetabulum, and in the femur,

tion of the acetabulum there is evidence of repair in some of the specimens where there was no pressure.

From the specimens examined it is clear that in hip disease the head of the femur is crowded against the acetabulum in a direction upward and backward, and that the process of repair is more advanced where the pressure is removed.

It is a well known fact that in hip disease, in the acute or subacute stage, a reflex spasm of the muscles about the hip exists, this spasm being in proportion to the amount of inflammation of the joint. The direction of the force from this muscular spasm can be readily demonstrated (see Fig. 4). On an os innominatum and a femur the origin and insertion of all the muscles which connect the two bones are marked, and small hook staples are inserted in the bones at the proper points. Small elastic rubber bands are made to connect the staples on the ilium representing the origin of the muscles with those representing the insertions on the femur. If this is done a representation will be given of the direction of the muscular force surrounding the hip. The exact amount of the pressure force of the contracted muscles dependent upon the muscular tonicity will not be represented in this way, but the direction of the resulting force will be, and it will be found to be upward and slightly backward. This muscular pressure in disease is very much greater than is ordinarily supposed.

The physiologists estimate the force of a muscle fully contracted at from six to ten kilogrammes to every square centimetre of muscular surface on cross section. In an adult, at the hip joint, the muscles connecting the femur with the ilium may represent from ten to fifteen square centimetres, and although these muscles are rarely contracted to their full extent, it is evident that the amount of force when slightly contracted is by no means inconsiderable; and during an acute spasm, when the muscles are firmly contracted, the pressure driving the head of the femur upon the acetabulum must be very great even in a child. It is well known that the muscular spasm at its acute stage is both a tonic spasm and also an acutely exaggerated spasm on any jar or violence to the hip, or even on the apprehension of any jar or violence. This spasmodic stage subsides after a while if the hip is kept absolutely free from motion, but it is a matter of experience that this spasm may persist for months, reappearing upon locomotion until the morbid process is entirely corrected and the inflamed bone is solid. It is also known that fixation of the hip joint is a difficult matter, and complete fixation (that is, the prevention of even the slightest motion) is impossible. The femur can be fixed, but the ilium can not. This is true for the reason that neither the thorax nor the pelvis can be compressed to the point of firm fixation, and the muscles upon the pelvis are capable of exerting bad motion.

Entroscopy, or amount of traction, can drive the head of the femur out from the acetabulum—but in doing so, and passing beyond the point, would show that before pressure is actually removed the process of repair is proceeding. Clinically, a few facts should be kept in mind: (1) The greatest benefit of hip disease is the relief of the inflammation.

* Read before the Medical Society of the New York Academy of Medicine, April 19, 1894.

healing proceeds with marked rapidity after amputation of the hip joint. It would appear, therefore, that if a pulling force can be applied which would not only counteract the spasmodic muscular force, but actually distract, it is desirable to employ it, this being entirely independent of any attempt to limit the motion of the hip joint. It has been contended that the same effects could be brought about by the administration of anæsthesia and the fixation of the patient in a plaster-of-Paris spica bandage. Clinical experience, however, shows, first, that the hip is not thoroughly fixed by means of a plaster-of-Paris bandage; and second, that where muscular spasm has persisted for some time it does not relax entirely under an anæsthetic. This we have found evident in several instances of excision of the hip joint, where the finger placed upon the head of the femur at its contact with the acetabulum could detect no separation of the femur from the acetabulum. A traction force of several pounds (five to twelve pounds) was found necessary to overcome the muscular resistance, even in children enfeebled by disease and with disorganized hips, to a sufficient extent to permit the slightest distraction. An anæsthetic may and undoubtedly does diminish the pathological muscular spasm about the joint, but it does not remove it entirely.

No argument will be needed to demonstrate the fact that a certain amount of traction can be applied to the femur in hip disease. A number of experiments have been made to determine the direction and amount of traction force which is feasible and which can be worn continuously. The details of these experiments will not be given here, but it will be stated that the limit of traction has been found to be the limit of the skin to endure the strain of the adhesive-plaster pull. This amount can be placed at from ten to twenty pounds. It therefore remains to determine what is the effect of the traction force of from six to twenty pounds upon a hip joint affected by hip disease. To determine this, observations were made, first, on the cadavera of healthy hips; second, on the cadavera of diseased hips; third, on healthy individuals, and fourth, on patients suffering from hip disease.

MEASUREMENTS UPON CADAVERS.

1. *Normal Joints.*—The hip of a full formed fetus was prepared in such a way that the skin was removed so as to expose the muscles around the hip. It was found that under a slight amount of traction distraction was possible. This was entirely due to the capsule, but it was also demonstrated as a question on which the skin was removed without cutting the ligaments or muscles. A needle was inserted in the head of the femur and traction in the same direction as the acetabulum, a slight amount of force separating the two needles. An object being kept from separating the skin, the femur separated from the acetabulum and the pelvis tilted. The skin was not removed and a traction force was applied. Studies were treated with the femur and into the iliac bone with muscular activity induced in such a way that the traction force would and actually then induce resistance. Traction of a hundred pounds was applied, and it was found that the needles were separated as quickly as possible. After the separation

had been soaked in weak alcohol for some time distraction of an eighth of an inch was easily effected by a pull of five pounds.

On a large amount of material placed at our disposal by Professor Dwight, of Harvard College, it was clearly shown that traction distracted in all cases of femora in children dissected or undissected, and in all specimens of infants, and that the checks to distraction in adults in cadavera lay in the resistance, first, of the capsular ligament, especially of the anterior bands of the ilio-femoral ligament; second, in the resistance of the cotyloid ligament, and to a slight degree in atmospheric pressure. In children the lower edge of the acetabulum presents no resistance to a traction in the line of the axis of the body. (See Fig. 5). In adults this presents a resistance, but if the limb is abducted the resistance is avoided. Both in children and in adults, if the femur is extended to its utmost limit, the anterior bands of the ilio-femoral ligament lying on the front of the capsule prevent all distraction on any force which it is feasible to apply. If the capsule and cotyloid ligaments are disorganized, distraction is easy.

2. *Diseased Joints.*—In a specimen of a case of hip disease of six months' duration, where death took place from scarlet fever, it was found that distraction was easily made by the slightest traction. (See Fig. 6.) In this specimen the cotyloid ligament was disorganized, but the strong ligamentous fibers of the capsular ligament alone served as a check to separation of more than half an inch on traction. But within that limit even the weight of the pendent fragment of the femur distracted, as is seen in the accompanying illustration.

MEASUREMENTS UPON LIVING SUBJECTS.

Experiments upon living subjects demonstrate that traction distracts under certain circumstances.

A number of experiments have been made on the subject of traction by several observers.*

Brackett demonstrated that in certain cases in hip disease distraction resulted from traction.

The following observations have been made with much care to produce further evidence.

Measurements were made in traction both in health and in disease.

The experiments here reported were made at the Children's Hospital, and the writers are indebted to Dr. John Dane for the perfection of the method by which the experiments were carried out, and for his most careful work in connection with them.

The method of experiment was as follows: The patient was placed upon a hard table with the head against the wall, and perineal straps upon each side were secured to the head of the table by stout webbing. In some instances shoulder straps of a similar character were also

*Koser, *Prothèse*, and Marshall, quoted by Larnach, *Am. Jour. Orthop.*, 1896, p. 128. *Brackett*, *Trans. of the Am. Orthop. Assoc.*, 1897, p. 174. *Ball*, *et al.*, *ibid.*, 1898, p. 174. *Brackett*, *Trans. of the Am. Orthop. Assoc.*, 1898, p. 174. *Brackett*, *Trans. of the Am. Orthop. Assoc.*, 1899, p. 174. *Brackett*, *Trans. of the Am. Orthop. Assoc.*, 1900, p. 174.

added. This was for the purpose of preventing the child from slipping on the table as far as possible. All measurements were taken from the wall. Measurements at different points were taken by different observers. The anterior superior spine was marked with a hair line in ink on both sides, and in some of the experiments the great trochanter was marked as well. A mark was also made at the site of the external malleolus. A tape was carried from the wall touching these marks on the side experimented upon, and on the other side it was carried to the anterior superior spine to show any tilting of the pelvis which might occur. Traction on the leg was made by means of webbing straps fastened to a lacing which did not go below the knee. Traction, therefore, was made wholly upon the thigh. Traction was made by means of a spring balance fastened to the webbing straps below the foot. In each experiment traction was first made of ten pounds; then of twenty pounds. To prevent any error caused by the slipping of the skin around the sole of the foot, a plaster-of-Paris bandage or a stout cotton bandage was applied from the toes to the knee, and upon this bandage the site of the external malleolus was marked. The heel was made to slide upon a glass plate to avoid friction. In making the experiments any case where the heel left the plate during the traction was thrown out as inaccurate. The experiment was made as follows:

An observer was detailed to watch the marks upon the anterior superior spine; another observer was detailed to notice the mark at the external malleolus; a third noted the anterior superior spine on the well side, and in some of the earlier experiments, to check the correctness of the method, independent observers were placed either at the knee or at the great trochanter. In most instances three observers were employed, one at the anterior superior spine, one at the external malleolus on the diseased side, and the other at the anterior superior spine on the well side. (See Fig. 7.)

The patient was placed upon the table as prepared, and each observer read the position that the line marked

with ink upon the part of the patient he was to watch measured on the tape. Traction of ten pounds was made. Each observer noted the position under the new conditions, and they were put down by the recorder. Traction of twenty pounds was made, and each observer noted the position of the line on the tape. These were also noted by the recorder. In every experiment, unless otherwise stated, the experiment was immediately verified with the observers changed. The method of observation, in short, was to measure the distance of the external malleolus from the wall; knowing the distance of the anterior superior spine, to make traction upon the leg, see how much the external malleolus had descended; then, noting how much the anterior superior spine had been pulled down, to find the amount of separation between the external malleolus and the anterior superior spine, this giving the amount of distraction of the hip-joint surfaces. The method of these experiments has been related in detail because upon its accuracy the value of these experiments depends.

Various sources of error were eliminated. The fact that traction was made upon the thigh alone eliminates any source of error from stretching of the knee-joint ligaments.

An error due to the stretching of the skin may be disregarded in these observations. The skin of the thigh is pulled down, but the skin of the leg is not pulled upon. Consequently, any such stretching would tend to show less lengthening than really occurred.

RECORD OF THE EXPERIMENTS.

The first experiment, which is of special interest, is not in the table. A girl of seven, with dorso-lumbar Pott's disease, had an abscess which pointed at the outer side of the thigh. This was opened by an incision of three inches, exposing the trochanter. The hip joint was healthy. Some days after operation the girl was laid upon a table, secured in place, and an upright was erected upon the table with the needle pointing at the marked spot on the exposed trochanter. Ten pounds of traction produced no measurable effect; traction of twenty pounds produced lengthening of a quarter of an inch, as seen by the mark

TRACTION IN HEALTH.

Case	Sex	Age	Condition	Position of	Amount of
1	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
2	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
3	Female	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
4	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
5	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
6	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
7	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
8	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
9	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
10	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
11	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
12	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
13	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
14	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
15	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
16	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
17	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
18	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
19	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
20	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
21	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
22	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
23	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
24	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
25	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
26	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
27	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
28	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
29	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
30	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
31	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
32	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
33	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
34	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
35	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
36	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
37	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
38	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
39	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
40	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
41	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
42	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
43	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
44	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
45	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
46	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
47	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
48	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
49	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
50	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
51	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
52	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
53	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
54	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
55	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
56	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
57	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
58	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
59	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
60	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
61	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
62	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
63	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
64	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
65	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
66	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
67	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
68	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
69	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
70	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
71	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
72	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
73	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
74	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
75	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
76	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
77	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
78	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
79	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
80	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
81	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
82	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
83	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
84	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
85	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
86	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
87	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
88	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
89	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
90	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
91	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
92	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
93	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
94	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
95	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
96	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
97	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
98	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
99	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch
100	Male	17 years	Hip disease, no effusion, no deformity	10	1/4 inch

on the trochanter as compared with the fixed point adjacent—i. e., the needle. If traction of twenty pounds was made, the head of the trochanter could be seen to descend; if traction was suddenly relaxed, the head of the femur could be seen to move upward.

The fourth experiment is of interest, as it was done upon a young and particularly well-developed girl without any disease. Traction of ten pounds, instead of causing lengthening, caused an eighth of an inch shortening.

The seventh experiment, which was done upon a young man sixteen years old, was of the same character. Traction of ten pounds produced no effect, but traction of twenty pounds produced an eighth of an inch shortening. This was verified four times with all the observers changed, and the result in each case was the same. It is not easy to explain this phenomenon. Possibly in these cases the amount of traction applied stimulated the healthy muscles to contraction, which vitiated the measurement by altering the axis of the leg. In the fourth experiment twenty pounds altered this and produced a half inch lengthening in a boy of seven years of age. It seems probable that in the seventh experiment, where the boy was sixteen years old, a larger amount of traction than twenty pounds would have produced a lengthening.

OBSERVATIONS UPON DISEASED JOINTS.

In these experiments traction was made in the line of the body, and, unless otherwise stated, the amount of malposition present was not enough to be noted.

As evidence of accuracy of these measurements it is to be remembered:

1. At the time of the experiment the observers were entirely ignorant of its result.
2. The error caused by the slipping of the skin tends to diminish the amount of distraction as shown by these experiments.
3. The experiments agree with each other and with those of other observers.

The experiments in general need no comment, except that it is interesting to note that in Experiment 8 the child had never had traction applied before, and in that case the largest amount of distraction occurred. That is to say, it seemed as if in the other cases where traction treatment had been used a certain amount of previous stretching of the muscles might have existed. In Case XII traction of twenty pounds seemed to be insufficient to cause separation of the joint surfaces, the disease having persisted some time.

The conclusions which can be drawn from this table seem to be the following: That traction of ten pounds in children before puberty as a rule produces lengthening of the leg in hip disease, and that this lengthening is due to separation of the joint surfaces; that the amount of this separation varies in different instances, being in general less in older children than in young ones, and also varying in individual cases under apparently the same conditions, perhaps on account of some anatomical peculiarity; that twenty pounds traction, as a rule, produces more separation than ten pounds.

It is probable that in the later cases of hip disease, where cicatrization of the capsular tissue may be supposed to have taken place, distraction is not as readily made.*

What has hitherto been stated in this paper would indicate that it is desirable to apply distraction to the hip joint in hip disease. It remains for the complete demonstration of the proposition presented to show the effect upon the diseased joint if traction is efficiently applied for a long period. This can be done both by clinical facts and by pathological specimens.

CLINICAL FACTS.

While it is difficult to present clinical evidence in a matter of this sort to any one not able to examine person-

* *Transactions of the American Orthopaedic Association*, 1893, vol. VI, p. 127.

TRACTION IN DISEASE.

Case	Sex	Age	Length of disease	Character of disease	Amount of traction in pounds	Result in inches
1	Male	1 year	1 year	Acute.	10	No change. Verified.
2	Female	1 year	1 year	Acute and sensitive.	20	1/2 lengthening.
3	Female	1 year	1 year	Acute and sensitive.	10	" " Not verified on account of pain.
4	Female	1 year	1 year	Chronic, fifteen degrees of flexion.	20	No change. Verified with different observers.
5	Female	1 year	1 year	Acute, malposition, few degrees of flexion.	10	1/2 lengthening. Not verified.
6	Male	1 year	1 year	Chronic, old abscess.	20	" " Verified.
7	Male	7 years	1 year	Chronic, abscess, 100 degrees of flexion.	10	" " Verified.
8	Male	1 year	1 year	Acute; some motion.	20	" " Verified.
9	Female	1 year	1 year	Chronic, 100 degrees of flexion, not very painful.	10	" " Verified.
10	Male	1 year	1 year	Moderately sensitive; very little motion.	10	No change. Verified.
11	Male	1 year	1 year	Chronic, 100 degrees of flexion.	20	1/2 lengthening. Verified.
12	Male	24 years	24 years	Chronic, 100 degrees of flexion.	10	" " Verified.
13	Male	1 year	1 year	Forty-five degrees of motion.	10	No change. Verified.

ally the cases quoted, yet a few cases are here reported. The cases were taken from the records of the Children's Hospital, and the patients have been under the care of various surgeons in service at the hospital, all, however, carrying out treatment by more or less efficient traction during the requisite stages. They were not continuously, and in some cases not at all, under the personal care of the writers. They represent cases where, from the history of the results, there could be no doubt as to the existence of well-marked disease at the joint, and are selected because of this fact. They are all hospital cases with treatment at their homes under the direction of the out-patient department after their discharge from the hospital as well as in the wards of the hospital during the acute stages when necessary. They do not represent the best results which can be obtained under more thorough nursing, under the direction of a trained nurse or an intelligent mother in exceptional cases. They are hospital cases treated in a routine way. They are intended to illustrate the fact that in cases thoroughly and properly treated by traction subluxation can be prevented; that in cases of the severer types, if treated early, some motion of the hip joint can be preserved; and that in the less severe cases, or cases where prompt and early treatment was possible, this can be expected.

In the cases here reported the diagnosis of hip disease was certain. All cases were rejected where the evidence of hip disease was doubted, both from the records and from the statements of the examiners. The record of motion is also without doubt in the cases where it is recorded, as it was made with particular care, and all cases were rejected where there was any doubt. The motion was tested by placing the patient on the back, with one hand upon the pelvis, the other manipulating the thigh. The examination, diagnosis, and subsequent observation were made by experienced observers. The cases had all been under observation for a long period.

The cases may be grouped. First, all those of hip disease of a severe type, as proved by the development of atrophy in the arrest of growth, or even without atrophy, but with persistent accumulation of matter, and deformity, and a long period of pain and sensitiveness. In the lighter form of disease treated before the severe symptoms had been developed. These cases may be regarded as representative examples of the effect of the treatment. The results when treatment was early were particularly successful.

RECORD OF MOTION, CASE I.

CASE I.—Henry B., aged 12 years, was admitted to the Children's Hospital in February, 1884, being at that time fifteen years old. The disease had been of progress for five years. He was a well-built boy, stout in build, but had been lame for a long time. He was unable to walk, and was confined to bed. His mother had been told that the disease was incurable, and that the child would never walk again. The treatment was carried out by traction, and the child was able to walk again. The results were successful.

Present Condition.—The child was perfectly recovered, and was able to walk without any aid. The disease had been cured, and the child was able to walk again. The results were successful.

directions. Patient walks well. There is a three-inch shortening, but the trochanter is not above Nélaton's line. There is no deformity. (See figure, Case I.)

CASE II.—Nellie M. entered out-patient department of the hospital September, 1884, when eleven years of age. The disease had lasted for three years. There had been much pain, and the patient had been treated by high shoe and crutches. Abscesses had been present and a sinus remained. Persistent muscular spasm and pain. Traction treatment was carried out, and a traction splint worn for three years and a half; after this a protection appliance was worn and is still worn, although no symptoms have been present for a long time.

Present Condition.—Twenty-one years of age, strong and healthy. Walks firmly without splint, but with a limp. The trochanter is below Nélaton's line. There is shortening of two inches from difference in growth. Motion of the joint limited except in flexion. (See figure, Case II.)

CASE III.—George K. entered the out-patient department of the hospital in March, 1887, when fifteen years and a half old. The disease had existed for four months. Traction splint was applied. The hip became sensitive, and an abscess appeared the following year. Muscular spasm lasted for two years and a half. Traction was continued for three years, and a protection splint worn four years longer.

Present Condition.—Twenty-two years old; healthy, strong man, walking without a splint. There is an inch and a half shortening of the leg, but no subluxation, the trochanter being below Nélaton's line. The position of the leg is normal. There is no motion. (See figure, Case III.)

CASE IV.—Hattie H. came to the out-patient department of the hospital in March, 1888, when five years old. Disease of six months' duration. The leg was fixed to an angle of forty-five degrees. There was much pain and sensitiveness. The muscular spasm continued for nearly two years, and an abscess followed. Traction treatment was carried out for two years, a traction splint being worn a good portion of the time. A protection splint was used for three years more.

Present Condition.—At the age of thirteen the child is strong and well. The trochanter is below Nélaton's line. There is a shortening of half an inch. Motion of joint limited. (See figure, Case IV.)

RECORD OF MOTION, CASE V.

CASE V.—Susan H. entered the out-patient department of the hospital in January, 1888, when six years old. The disease had lasted for three months, and the leg was fixed. There was much pain and sensitiveness. The muscular spasm continued for nearly two years, and an abscess followed. Traction treatment was carried out for two years, a traction splint being worn a good portion of the time. A protection splint was used for three years more.

Present Condition.—The child is strong and well. The trochanter is below Nélaton's line. There is a shortening of half an inch. Motion of joint limited. (See figure, Case V.)

CASE VI.—John F. entered the out-patient department of the hospital in March, 1888, when six years old. The disease had lasted for three months, and the leg was fixed. There was much pain and sensitiveness. The muscular spasm continued for nearly two years, and an abscess followed. Traction treatment was carried out for two years, a traction splint being worn a good portion of the time. A protection splint was used for three years more.

Present Condition.—The child is strong and well. The trochanter is below Nélaton's line. There is a shortening of half an inch. Motion of joint limited. (See figure, Case VI.)

about slight permanent flexion. The diseased limb is two inches shorter than the other; the trochanter, however, is below Nélaton's line.

CASE VII.—Robert H. was brought to the hospital in March, 1888, when four years old. The disease had lasted about two months. There was much muscular spasm at the hip, with marked pain, which persisted for some time, with swelling about the hip. Bed treatment was carried out for a month. The muscular spasm improved after six months, but remained for two years. Traction treatment was applied during all that time, and a traction splint worn while the patient was up. A protection splint was worn for two years more.

Present Condition.—At the age of ten the patient walks without a limp. There is a shortening of half an inch in the affected limb, but no deformity. Motion is possible to ninety degrees in flexion; rotation is limited.

CASE VIII.—Esther M. came to the out-patient department of the hospital in 1888, when eight years old. Disease had lasted for six months. The hip flexed and adducted. Pain was severe. No motion at the hip joint was possible. Pain and sensitiveness were marked and bed treatment necessary. Treatment by traction was carried out for three years, and protection for three years more. Protection splint is still worn as a precaution.

Present Condition.—The patient is fourteen years of age, strong and well, and can walk without a splint. Forty-five degrees of motion is possible in the direction of flexion. There is an inch and a half of shortening, but the trochanter is not above Nélaton's line. There is no deformity.

CASE IX.—Lizzie C., brought to the out-patient department of the hospital in May, 1886, when eight years old. Disease had lasted six months. Leg was fixed and adducted and there was no motion. Muscular spasm continued for five years. There was no abscess, but patient required entrance to the hospital and bed treatment several times. Traction treatment by means of weight and pulley and traction splint continued for six years; protection for three years more.

Present Condition.—Seven years of age, strong and healthy girl, with a shortening of half an inch. Ten degrees of motion possible at the hip joint. There is no malformation nor deformity. Outward without pain, but at times wears the protection splint.

CASE X.—Anastasia H. entered the hospital in 1886, when six years old. Disease had lasted for seven months. Night cries had been noticed for three months. Admission to hospital for bed treatment. Patient remained in hospital three months. There was no abscess. Spasm continued for two years. Traction treatment by means of weight and pulley and traction splint continued for six years; protection for three years more.

Present Condition.—The patient is now nine years old, strong and well, walks without a splint and with no perceptible limp. There is a shortening of half an inch. Motion of the hip joint is good.

CASE XI.—Mary C. came to the out-patient department of the hospital in April, 1886, when four years old. Disease had lasted for six months. The hip flexed and adducted. Pain was severe. No motion at the hip joint was possible. Pain and sensitiveness were marked and bed treatment necessary. Treatment by traction was carried out for three years, and protection for three years more.

Present Condition.—The patient is now seven years old, strong and well, walks without a splint and with no perceptible limp. There is a shortening of half an inch. Motion of the hip joint is good.

CASES TREATED AT AN EARLY STAGE.

CASE XII.—James G. entered the out-patient department of the hospital in April, 1890, with a history of pain in the knee at night for several weeks. Pain continued for some time. Limitation of motion. There was, however, but little muscular spasm. A traction splint was applied and worn continuously for two years. In August, 1892, a protection splint was applied and has been worn since that date.

Present Condition.—The position of the leg at present is normal. There is no shortening. Motion beyond ninety degrees. There is no muscular spasm.

The diagnosis in this case is based upon the pain which persisted, the limitation of motion, and the length of time which the muscular spasm persisted. (See figure, Case XII.)

CASE XIII.—Eva C. The patient entered the out-patient department of the hospital November, 1891. There was severe pain, with night cries, muscular spasm, and deformity, and these symptoms had persisted for several weeks. The patient entered the wards of the hospital and remained in bed with traction treatment for six weeks. A traction splint was worn for a year and then removed by the parents, the child being considered by them in perfect health. The child was allowed to use the leg freely, and a relapse occurred after six months, with pain, night cries, spasm, and deformity. Traction treatment was renewed after a preliminary bed treatment with fixation and traction.

Present Condition.—At the present time, three years and a half after commencement of treatment, there is slight permanent flexion and free motion of twenty degrees. There is no subluxation and no shortening. Patient still wears a traction apparatus.

This case is reported as indicating a lack of perfect result. Treatment was discontinued by parents for several months and a relapse occurred.

The case is still under observation, but the ultimate result, which could in all probability have been without limp, will be a slight limp.

PATHOLOGICAL EVIDENCE.

The effects of traction, when thoroughly carried out, can be seen in the accompanying specimens.

The first is that of a boy of nine, who was attacked with hip disease of an acute form six years before. He was treated with traction efficiently for a long time, first with recumbent fixation, later with an ambulatory traction splint and crutches, and afterward by a protection splint. An abscess developed in the early stages, was incised, and it subsequently healed entirely. The boy recovered completely after a number of years from his hip disease, having, however, a limb which was slightly shorter (an inch and a half) than the other and with limited motion. The position was good, and the leg was thoroughly useful and remained so two years after the discontinuance of all treatment, the boy being as active as any boy at this time. He was, however, subsequently seized with tubercular meningitis, being of a tubercular family, and died. At the autopsy complete cure of the hip disease was found, and this specimen also shows that there had been no widening of the acetabulum, and but little alteration in the shape either of the acetabulum or head of the femur. (See Fig. 1.)

A comparison of this specimen with those of severe hip disease where traction was not used, speaks most emphatically for the thoroughness of the method.

This second specimen is of the head and neck of the femur where excision was done after two or three years of efficient treatment by traction, but the reparative process was not sufficient in this case to establish a cure; the patient's general condition failed, and excision was done. It is to be noticed that there is very little alteration in the shape of the head of the excised femur. (See Figs. 9 and 10.) This, compared with the accompanying specimen of an excision of a patient with hip disease of similar severity and duration where no traction had been applied, would appear fairly to show the effect of traction in saving the head of the femur from destruction.

It can not be supposed that the best results can be obtained by the application of inefficient traction. A sufficient amount of traction, constantly applied during the stage of muscular spasm, is needed. It is, of course, not the only therapeutic measure which is required; fixation and protection are also needed at the various stages. If traction is not applied properly, or is applied at the wrong time, or is insufficient in extent, it is no more efficient than a drug in judiciously or wrongly used or administered at the wrong time. Judgment is required in the use of this measure as of any other, and a great deal of care and attention to detail is necessary to insure the constant application of from eight to ten or fifteen pounds' traction uninterruptedly for two or three or six months, not only on the part of the surgeon, but on the part of the nurses and assistants. It is owing to the defect in this respect that in many cases treatment by traction is ineffectual, and the results obtained are not as satisfactory as desired. This leads to an unjust condemnation of the methods of treatment by traction by those who have tried this method, and, having met with unsuccessful results, have blamed not their own method of application, but the method in general, which is as irrational as if one who administered a drug in an inefficient dose should lay the failure to the drug, when it is properly due to its faulty administration.

The thorough use of traction—i. e., to the point of distraction, requires on the part of the surgeon not only a familiarity with the mechanical details of apparatus and the proper application, adaptation, and fitting of appliances suitable in each case, but the ability to arrange for such composition and assistance on the part of nurses or attendants as shall insure the continuance of the necessary amount of traction at all times. If this is not done the results are not complete, just as the lack of proper administration of any other therapy results in no operation, or even has proved the surgeon need to operate. In the case of traction, though, the result of a more complete and constant traction of ten to fifteen pounds the patient would come from a more rapid recovery, and during the treatment, the patient with a traction of this position, the pain would be very much lessened.

Constant care is required both in the management of the patient and the duration of traction used. The care required is not greater than is possible if sufficient attention is given to the subject and the original indication for it is solid.

In conclusion, it is claimed that at a suitable stage in

hip disease traction force is desirable; that the amount of traction should be in proportion to the amount of muscular spasm, and continued as long as the spasm persists. It is also clear and demonstrable that an efficient traction force distracts, and it is manifest that distraction, or the separation of one inflamed bone from an adjacent inflamed bony surface, is desirable; that in this way every chance is given to promote cure and cicatrization of the previously inflamed bone. If an indication for surgical treatment is ever clearly written in pathological specimens, certainly that of distraction should never be overlooked. It should always be remembered that in treating hip disease at a certain stage the object should not be simply rest, or fixation, or protection from jar, but actual distraction, and that traction short of this is inefficient.

THE PRODUCTION OF DISEASES BY SEWER AIR.

By A. JACOBI, M. D.,

CLINICAL PROFESSOR IN THE COLLEGE OF PHYSICIANS AND SURGEONS,
NEW YORK.

(Concluded from page 109.)

SOME of the medical reasoning is not much better. For instance, Barnes (*Brit. Med. Jour.*, July 28, 1888) studied fifty separate outbreaks of diphtheria for the purpose of discovering if diphtheria may not arise from certain combinations of filth and unsanitary conditions independently of a pre-existing case of the disease. According to him the prevalence of diphtheria in rural districts is explained by the want of suitable systems of drainage, combined with filth in the form of decomposing animal matter. In the majority of instances he found no previous case as the starting point of each outbreak. Besides, the author claims that the winter months, when most diphtheria is met with, are unfavorable to the development of low forms of animal or vegetable life—he forgets that the throats and the houses are warm—and believes that because sore throats existed previous to and simultaneously with the outbreaks of diphtheria, it follows that we have to deal not with a specific germ but with a poison gradually developed.

In the *Medical Record* of January 28, 1893, Dr. Louis Fischer approached the subject a little more seriously. He published a very interesting article on The Result of Examination of Sewer Gas which I found in *Trans. and Proc. House of Comm. Comm. of Diphtheria District*. It is to be regretted that sewage gases are so easily overestimated and given their due. As a single specimen of gas was given to the House of Comm. as a specimen of sewer gas, I have already said, and written the paper. I have not seen, however, the by-product of an examination. A real bad diphtheria, the House of Comm. found having no other. If the previous winter there had been diphtheria in the district, and had the gas been on the same side of the house, the diphtheria might have been more numerous, or perhaps, one house and two specimens would have been the result.

was, therefore, every opportunity for the foul air from the cesspit to be siphoned into the house. The patient was carefully isolated, and, though he was one of a very large family of children, no one else caught the infection. As there was not a single case of the disease in the neighborhood, as the boy did not mix with any children except his own brothers and sisters, and lastly, as he was the only one in the family sleeping in the line of escape of foul air, the conclusion seems irresistible that in this case, at all events, the diphtheritic poison was conveyed in the emanations from a foul drain such emanations polluting the air that was nightly breathed. How the specific bacillus got into the cesspit is, of course, a very difficult matter to explain.

The possible causes of an invasion of diphtheria are so many that a resort to an autochthonous origin ought to appear superfluous. Perhaps, however, it is the very multiplicity of possibilities which acts confusing and bewildering: the vulnerability of the young mucous membrane, the frequency of nasal and pharyngeal catarrh, the narrowness of the nose, the large size and the softness of the tonsils, the frequent fermentation of food in the mouth, the sucking of the soiled little fingers, together with the influence of family disposition, which is more powerful in the young. Their constant intercourse with each other in large families and in densely populated houses and districts, in schools and on playgrounds, the possibly long period of incubation during which the disease is contagious though giving rise to no symptoms, let us just so many predisposing causes of contagion; and the large number and size of the lymphatics renders every attack so much the more dangerous.

The very fact that diphtheria need not always be of the same type ("tonsillitis") are diphtheritic—a fact proclaimed by me dozens of years ago, which I have the satisfaction of seeing more and more, though with great hesitation at first, established even by bacteriologists—that there are as many cases out of bed and out of doors as in bed and indoors; that, particularly in adults, diphtheria may be long and give rise to but few distressing symptoms; and that a mild case of diphtheria may produce very serious consequences, rendering contagious by merely milk and other beverages, by touching, by kissing, by sitting, by working, by sitting, by sleeping, by talking, and all other persons coming into contact with the patient, extremely easy. The great virulence of the diphtheric poison, as it well known, may extend over years. The young milk and cream can be bodies, are imported in milk, cling to walls and floors, to toys, to cushions, to clothing, and clothing which is often kindly donated to the poor by the benevolent well-to-do, when they wish to get rid of their diseases. They stick to cushions and curtains, rendering to some extent the air itself deadly in certain rooms, and on your diphtheric nose which even long will continue to keep dead that it is not a breathing poison after it has been sent to the post, it strikes the most sensitive place. The more sensitive part of our people, the frequency of sneezing, is treated with a dose of diphtheria, the sneezing it causes. There is no doubt, however, that nearly all cases of diphtheria are

have and spread diphtheria. Thus it appears that we ought to think twice, and indeed many times, before admitting among the causes of diphtheria new factors which can not be proved.

"No contagion could be traced." That is the introduction to every wild and unproved theory of indigenous spontaneous generation. When a case of cholera breaks out in a village a thousand miles away from the coast, is there anybody in our time who looks after chemical poison in a well or for filth on the roofs? You look for direct or indirect contagion from a tangible source. Why not so in diphtheria? In the *New York Medical Journal* of September 27, 1886, I have quoted from Isambert the case of a medical assistant who had nasal diphtheria many months, and then traveled half a year to get rid of the last remnants. He fully recovered; but how many deaths did he spread—from railroad car to railroad car, from stagecoach to stagecoach, from hotel to hotel? How many may have been the physicians who searched in vain for the causes of the sporadic cases suddenly springing up in their places, and the epidemics generated by them along the roads on which the luckless French wanderer after his own health strewed out his curses? Nobody suspected the traveler who left days ago, just as nobody may be able to trace every outbreak of cholera to the unknown person who carried it upon his person or in his bowels. Nor is this an isolated case of a long duration of diphtheria. Cadet de Gassicourt operated for laryngeal diphtheria after eighteen, twenty-three, and forty-three days. Sanné had croup patients who recovered after twenty-seven, thirty-two, and sixty days. I know of many cases of diphtheria protracted into the second or even the third month.

Such facts, pointing as they do to the ready communicability of diphtheria, have influenced my opinion from early times. I can not see anything miraculous in the sudden appearance of a *Bacillus* or a *Streptococcus diphtheriae* in a person apparently not exposed to it. During an epidemic there is *nobody* not exposed to it, and everybody is subject to it under favorable circumstances. The latter mean a fit condition of the human integument, either cutis or mucous membrane, which makes them liable to become a resting place for the germ. That fit condition is a slight or severe wound, abrasion, denudation of the surface. As no healthy surface becomes erysipelas in spite of erysipelas being epidemic, as Fehleisen's bacillus requires a sore, so diphtheria, being ubiquitous and waiting for a chance, will stick to a cutaneous wound, a stomatitis, a pharyngeal or nasal catarrh, and will rapidly multiply. A resected tonsil will thus be covered with a pseudo-membrane within a day. Only yesterday Dr. Caille reported in the meeting of the American Pediatric Society such a case. (I mentioned in general that pseudo-membrane diphtheria.) Without the operation, that tonsil might not have been affected at all.

In my paper on diphtheria and diphtheritic affections (*Ann. Med. Times*, August 11, 1890) I mentioned a case which occurred in the mouth of the surgeon of an railroad train. It was a few days after an operation of the throat was

the poor and the rich, maintained the independence of diphtheria from bad hygienic conditions, and stated even a larger mortality among the rich. In a lecture published in *Guy's Hospital Gazette*, 1873, Samuel Wilks reports that it spread from the focus in Folkestone along the eastern counties of England, apparently quite irrespective of soil, impure atmosphere, or drainage. As regards London, it was more frequently met with in the better class of houses in the suburbs than among the lower and dirtier habitations of the poor. These views were not exactly refuted by good observations, but did not strike the fancy of the medical public. Jenner's view was strongly condemned in an otherwise favorable review contained in the *Dublin Quarterly Review*, August, 1861; nor was the conviction of the profession in this respect much changed before the appearance last year of Thorne Thorne's book, which again proves, as I tried to do thirty-three years previously, contagion as the aetiological influence, without relation to bad sanitary conditions as regards water supply, sewerage, and drainage.

In the discussion on the same question contained in the *British Medical Journal* of the two last months of 1893 and the beginning of 1894, Dr. Wilks again takes a leading part. His opinions on the same question have not changed. Davis, Priestley, C. M. Jessop, J. Bunting express themselves in the same way. George Johnson, Parker, C. N. Allfrey, H. G. Warrey (who assumes that every "membrane in sore throat is always diphtheritic"), and P. G. Marriott favor the sewer-borne origin of the disease; and George Johnson associates with diphtheria, in this respect, typhoid fever, pneumonia, puerperal fever, and albuminuria, which "may have such an origin," and charges that "those who believe in contagiousness only will not look for bad drainage." A few of his cases, which are to prove his point of view to be correct, are the following: In a wealthy house an infant was circumcised for phimosis; the wound became diphtheritic, and did not heal until the patient was removed to another house. Two servants were also affected with diphtheria; after defects in the sewer pipes were found and corrected no other case occurred. Another case is that of a butler in a wealthy and healthy house who contracted diphtheria. An untrapped sink pipe was discovered near his sleeping-room. He recovered, and there was no other case after the defect was mended. More, however, we do not learn, particularly nothing to exclude the hundred possibilities of contracting the disease.

If you will permit a personal remark I should here say that in spite of my positive statements, repeated a dozen of times in writing,* and a hundred times in lectures and discussions, I have personally been claimed as favoring, in the case of diphtheria, the sewer-borne theory. As late as this year, Emil von Kutschera, in *Ueber die Entstehung der Diphtherie* (1904), says (page 173) that "both in England and America there is a prevailing opinion, both among the medical men and the public, that diphtheria is a contagious and specific disease, and that it is spread by the sewer air."

* I still have the original of my review, appearing in *Journal of the American Medical Association*, March 1905, and which is now in the possession of the American Medical Association.

these countries diphtheria is often called a filth disease. According to Jacobi the connection between diphtheria and filth has, it is true, not been proved, but the author states as the result of his conclusions that it exists; for there are many reports which exhibit the co-existence of diphtheria and filth." A few moments later he gives me credit for a teaching which is also opposed to life-long convictions, for he adds: "The injurious influence of sewer gas and cesspools is emphasized by Baginsky, Monti, and English and American authors (Jacobi)." Of my writings, he quotes only my article on Diphtheria in Gerhardt's manual, 2d volume, of 1877. The only allusion to sewer gas contained therein is found on page 703, where I say that the influence of the seasons on the origin and the course of diphtheria is but conditional and indirect, in a similar way as that of "filth," or sewer exhalation.

In the November number, 1888, of the *Archives of Pediatrics* the late Dr. Charles Warrington Earle published a brief article on "the influence of sewerage and water pollution on the prevalence and severity of diphtheria." He begins by saying that "it has been claimed by many that imperfect sewerage has been the cause of diphtheria, and the people, urged on by the opinion of the doctors, frequently blame a sewer for poisoning a family and producing diphtheria, when the cause should be placed elsewhere. It is much better for us to recognize the true cause, if it is possible to find it, rather than to attack an imaginary one, for it is possible that while we are fighting the supposed gas as the cause, we are losing sight of the real enemy which should engage our attention."

"Jacobi says that cases of diphtheria which are traced to exhalations from sewers, or even to filthy habits of life, are very frequent. This opinion, especially in regard to sewerage, has been reiterated by scores and hundreds of physicians. It represents the prevailing idea of American physicians." Then Dr. Earle prints the opinions of a number of correspondents who deny the origin of diphtheria from sewerage, and shows me the errors of what he believes to be my ways.

Now, as it is both unhistorical and unpleasant to be charged, after a life in part spent on the study of diphtheria, with the very erroneous views always combated by me, I tried to refute Dr. Earle's allegations in the November number, 1888, of the *Archives of Pediatrics* (page 744). As my letter to the editor contains in the briefest possible way a statement of what I believe to be the facts, I beg to here repeat them.

"In my very first paper published on the subject (Diphtheria and Diphtheritic Affections, *Amer. Med. Times*, August 11, 1860, p. 96), I looked for the source and epidemic occurrence of diphtheria in contagion to the exclusion of any and all other alleged causes."

"On page 34 et seq. of my *Treatise on Diphtheria* (1880) you may read these remarks: 'Cases of diphtheria which are traced' (I might have said attributed) 'to exhalations from sewers (or even to filthy habits of life) are very frequent. Yet typhoid is attributed to the same causes. So is dysentery. Can these bad exhalations produce alike diphtheria, typhoid, and dysentery? Do these diseases

arise from a common poison? Or is the poison of a treble character, so that a part may give origin to diphtheria, the other part to typhoid, the third to dysentery? In a house in West Twenty-second Street, between Eighth and Ninth Avenues, in New York, three children and a female help were taken sick, two with dysentery and two with typhoid, in the course of a month. In the same house, in two of the children diphtheritic sore throats were of frequent occurrence.

"Have we to deal in such occurrences with special influences, or only with a lowering of the standard of health, thereby affording other morbid influences an opportunity to exercise their power?"

"I then quote (page 35) the results of the researches of the Board of Health of the State of Massachusetts, the third of which reads as follows: 'A positive connection between diphtheria and filth can not be verified, although the latter adds to the evil influence of moisture.' This statement I call (page 36) 'modest and sensible,' and one 'for which we have to be thankful.'

"In Diphtheria Spread by Adults (*New York Medical Journal*, September 24, 1884) I say: 'No permanent spontaneous generation is claimed or has been proved for cholera, scarlatina, or variola. Nobody looks for their primary cause in moist walls of houses, dry dust of streets, in the prevalence of previous house epidemics of typhoid fever, measles, or other eruptive diseases, in bad ventilation, in the odors of hospital wards, in putrefying kitchen refuse, or in the exhalation of sewers. But both medical men and laymen are found to be inexhaustible in accusing and condemning all those detrimental influences, not as being predisposing elements, not because of their injurious influence on health in general and on the condition of the mucous membranes in particular, but as the main and frequently sole causes of diphtheria. In the minds of many physicians, diphtheria is intimately linked with sewage: with them the trap of the water closet and the plumbing of the cellar are the first objects of attention, the patients and their families, fauces and nares coming in for a relatively smaller part of their care. If they would pay more attention to the direct sources of contagion, which is something substantial and definite, than to the indefinite and unperpetrated presumption of specific poisons in the exhalation of the house or the intake from the sewers, their attitude would be something more positive in a great many cases.'

"I do not mean to say that the more hygienic conditions to be looked after by the physician in every case of diphtheria, but the more I have seen the more I have been inclined to see that we may give to mean the conclusion that there is but one, greatly varying element, viz. a more or less abundant virus, and that the cause of an individual attack of diphtheria is the direct introduction.

"In a paper on The Transmission of Diphtheria, read before the Medical Society of Philadelphia, May 15, 1893, which has been republished in full in some medical journals, I speak of the following reasons existing, page 11: 'Diphtheria and other diseases. There is probably no spontaneous origin of diphtheria, and even then there is a question as to its nature or condition.' And again (page 12):

'When an attack of diphtheria has made its appearance, it is well enough to examine the hygienic condition of the house, with its deteriorating influences on the general health of the inmates, but look after the source of the case in the persons of friends, attendants, and help.'

"In my Remarks on the Nature and Treatment of Diphtheria, made by invitation before the Section of Diseases of Children of the British Medical Association, August, 1888 (*British Medical Journal*, September 22, 1888), there are found the following sentences: 'Foul air and sewer gas do not create diphtheria; they do create dysentery and typhoid, or such a condition of general ill health and malaise as to afford the diphtheritic virus a ready resting place. There were plenty of malodorous privies and foul smells fifty years ago, but no epidemic of diphtheria. Besides, and mainly through the careful observations of English physicians, such as are contained in Dr. George Turner's report on diphtheria in the lower animals and many others, the sources from which diphtheria may come are very many. Pigeons, fowls, turkeys, chickens, pheasants, cats, horses, sheep, cows are just as many sources of diphtheria for man. Foods of all kinds, vegetables and milk, will transmit it. It sticks to furniture, floors, and wall paper, railroad cushions and school desks. No spontaneous generation is required to explain its ravages.'

"These extracts, Mr. Editor, ought to prove that Dr. Earle does not stand alone with his views so ably discussed in your journal. Like him, I have always lamented the disposition of so many of us to look for the cause of an individual case of diphtheria in the wrong quarter. Like him, I have often found a professional brother inspecting traps and cellar floors, while the rest of the children of the family were permitted to play in the rooms and about the beds of those affected with the malady.

"I have never believed, nor do I believe now, that sewer gas *per se* is a cause or the cause of diphtheria. A sewer or a trap can convey diphtheria only when that particular sewer or trap has been infected with diphtheritic poison."

After these quotations and to day's remarks, I hope I shall be counted among those who will rather look for the cause of diphtheria in a germ communicated, directly or indirectly, from a patient or his belongings than from sewer air. The latter can not be made responsible enough in an occasional case where the introduction of germs into the sewer or into the sewer air, and their presence in the pipes, and their introduction into a house and their presence there are proved facts. My convictions tally with the experience of those who look

In a conversation with Dr. J. D. Bryant, for many years health commissioner of the city of New York, I learned a number of interesting facts. Since 1877 there has been no epidemic of diphtheria in New York. There have been scattered cases, and even local outbreaks. When Dr. Bryant entered upon his office the outbreak of diphtheria was still raging in New York, and the streets were everywhere full of patients. In reference to some one of these cases, he said: "In this case a child brought into the city, on the part of the mother, and a mother, accompanying, and a nurse, possibly introducing germs." Thus, the introduction of germs

or report actual defects were discharged. The general result of the investigation concerning the coexistence of an infectious disease and defective sewer was, however, negative; the number of cases where defects in joints and waste pipes were met with in such cases was limited. The large majority of diphtheria cases were found in tenement houses. Still, sewer and drain defects were more frequent in private houses containing two or three families than in tenement houses. No special class of people were mainly affected. Diphtheria was alarming in the city of New York before and after the Health Department was established. In answer to my direct question I was told that both diphtheria and typhoid occurred where plumbing was perfect, and were often not found where it was defective. Many typhoid cases were imported from the country in September and October. Dr. Doty related the case, and referred to many similar ones, of a baker who lived in Tenth Avenue with his family over an open earthen and brick sewer into which a privy found its outlet. There was no case of sickness. Physicians always looked for and searched for sewer gas or sewer infection; but the comparative statements of a number of inspectors were negative. Nor could it be said that there were more cases of diphtheria or other infectious fevers near the outlets of sewers or in the immediate proximity of stables.

Dr. William H. Park sends me the following abstract of a paper of his recently read:

"From the reports from a large number of cases of diphtheria it has been shown that bad drainage and bad plumbing have but little noticeable effect upon the spread of diphtheria in New York city. Though we may readily believe that the escape of sewer gas into a room might easily predispose to sore throats, and thus perhaps render persons more susceptible to diphtheria, the Health Department inspectors have not been able to find any cases where the infection with diphtheria came through bad sewer connections.

"The maps which we have in our possession show well how all the tenement districts of New York are infected, and not certain ones over old sewers or streams; also diphtheria is found about as frequently in the garret as in the basement.

Mr. Archibald Montgomery, a very intelligent master plumber of about twenty years' experience, gives the following as the result of his observation:*

"I consider do not lose more time from work on account of diseases than the mechanics in general.

"I have seen from the experience night men, etc., many cases of disease, but not diphtheria. The street is not a transmission.

"I believe in the theory of the sewer and not in the theory of the gutter, for the gutter is not a transmission.

"I am absolutely certain from extensive experience that the result of the presence of either diphtheria or typhoid is not the result of the sewer from the gut outlet, or of either disease caused by the escape of sewer gas.

*The statement of Dr. H. B. J. H. (the president of the Association of Plumbers).

"In places where the level of the sewer is below the general line, carbon dioxide is liable to form in large quantity.

"The inoculation of an abraded surface with sewage often leads to great local swelling, with implication of lymphatic glands and general symptoms of 'blood poisoning.'

"There is no discrimination against plumbers by life insurance companies."

I may be finally permitted to add the oral testimony of more than a dozen European medical men, and dozens of Americans. Every one was asked by me: What do you know of the production of a specific germ disease out of, or through, sewer air? The uniform answer was: There is a general vague impression among the public, but I never saw a case, or could prove one.

Some of the conclusions to be drawn from this paper would be as follows:

The atmosphere contains some specific disease germs, both living and dead.

They are frequently found in places which were infected with specific disease.

In sewer air fewer such germs have been found than in the air of houses and schoolrooms.

Moist surfaces—that is, the contents of cesspools and sewers and the walls of sewers—while emitting odors do not give off specific germs, even in a moderate current of wind.

Splashing of the sewer contents may separate some germs and then the air of the sewer may become temporarily infected, but the germ will sink to the ground again.

Choking of the sewer, introduction of hot factory refuse, leaky house drains and absence of traps may be the causes of sewer air ascending or forced back into the houses. But the occurrence of this complication of circumstances is certain to be rare.

Whatever rises from the sewer under these circumstances is offensive and irritating. A number of ailments, inclusive, perhaps, of sore throats, may originate from these causes. But no specific diseases will be generated by them except in the rarest of conditions. For specific germs are destroyed by the process of putrefaction in the sewers, and the worse the odor the less is the danger, particularly from diphtheria.

The causes of the latter disease are very numerous, and the search for the origin of an individual case is often unsuccessful.

Irritation of the throat and naso-pharynx is a frequent source of local catarrh; this creates a resting place for diphtheria germs, which are ubiquitous during an epidemic, and thus an opportunity for diphtheria is furnished.

Of the specific germs, those of typhoid and dysentery appear to be the least subject to destruction by cesspools and sewers. These diseases appear to be sometimes referable to direct exhalation from privies and cesspools. Very few cases, if any, are attributable to sewer air.

A made outlet from a sewer would be dangerous to general health because of the density of odors (not germs)

arising therefrom. Therefore a very thorough and multiple ventilation is required.*

The impossibility or great improbability of specific diseases rising from sewers into our houses, protected as they are, or ought to be, by good drains and efficient traps, must, however, not lull our citizens and authorities into indolence and carelessness. For the general health is suffering from chemical exhalations, and the vitality of cell life and the power of resistance are undermined by them.

STUDY OF

A CASE OF CARCINOMA VENTRICULI, WITH THREE PERFORATIONS IN THE POSTERIOR WALL, HISTORY OF ANTECEDENT GASTRIC ULCER.

By S. W. S. TOMS, Ph.D., M.D.,

BELLEVUE, L. I.,
LATE HOUSE PHYSICIAN, BUFFALO GENERAL HOSPITAL.

THE interest attached to the case I am about to report, owing to its pathological significance, induced me to keep the most careful record of the course and the various and varying signs and symptoms that developed while under my own personal observation. The patient had passed through the hands of six physicians previous to the time I was called in to treat her. Whether or not the true character of her malady had been recognized I am unable to affirm, but, judging from the courses of treatment that were pursued by her former medical attendants, together with the statements made directly to the patient and her immediate friends, as related to me by them, I should think it was not.

On April 2, 1893, I was requested to see Mrs. M. M., aged thirty-four years, a native of Canada, married.

Family History. Father, aged seventy-eight years, died of some acute disease, probably pneumonia. Mother, aged fifty-two years, died of a complication of diseases—heart disease, asthma, and pulmonary tuberculosis. Several brothers and sisters died in infancy; others alive and well, excepting a married sister, aged forty years, who has chronic valvular disease of the heart. A maternal aunt died of cancer of the stomach.

The patient, a woman of small stature and of spare habit, whose maximum weight during health was one hundred and twelve pounds, was of a nervous temperament and subject to hysterical convulsions from childhood. She possessed an active mentality, was very intelligent and bright, neat and methodical in habits.

She was married at fifteen, was always regular in time, but suffered with dysmenorrhea, the flow generally lasting seven days. She was married at twenty, but never became pregnant. Her previous parturition, postnatal and puerperal, when a child, without incident. Twelve years ago she had a severe and prolonged bleeding at a regular menstruous period. The hemorrhage was attributed to general debility, the subject and its cause became more regular afterward. Six years subsequent to this she had an attack of prostrating, from which she never recovered. On September 7, 1890 she underwent an operation without an anæsthetic for the removal of a uterine polypus, which had been growing for about seven months, and was accompanied by a bloody purulent discharge, which continued.

* The sidewalk ventrator in New York has not been found obstructed.

tated her that she could scarcely stand on her feet. She dreaded the operation greatly, and frequently had fainting attacks. The shock was quite severe, and she suffered from great nerve prostration and hysteria, which confined her to bed for six weeks. During this period she had frequent attacks of syncope and nervous chills. From that time she dates the onset of her "dyspepsia," and has suffered constantly ever since. It commenced with pain, nausea, and vomiting after food. She soon became unable to retain any solid articles of food: the only nourishment her stomach would tolerate were grapes and broths, on which she subsisted for some weeks, but continued to grow weaker and more anæmic. She was given different digestive ferments without relief and to no purpose. The ingestion of food produced a cardialgia for about three hours, accompanied by acid eructations, pyrosis, nausea, and lastly vomiting, with instant relief. She was constantly annoyed by herpes labialis, and has suffered more or less since with this affection. She stated that her digestion was never very good, and her stomach was always irritable.

She was placed upon a milk diet containing bicarbonate of sodium, which resulted in the production of "bilious attacks" without relief to her other symptoms, and it was discontinued after three weeks' trial.

There existed no history of trauma to the abdomen or indiscretions in diet—in the ingestion of fats, iced drinks, hot tea or coffee, alcohol, or irritants that would injure the gastric mucous membrane. From girlhood she suffered to some extent from borborygmus, but never was troubled with headaches or neuralgias.

She lost thirty pounds in body weight, which was very rapid, and in the summer of 1892 was so weak and anæmic that the slightest emotion would produce attacks of syncope. The cardiac pulsations gave a subjective sensation in the brain, and dyspnea was so troublesome that she required almost constant fanning. In August of that year she consulted an eminent New York physician and afterward went there for treatment. At this time she was placed upon milk diet with lime-water every two hours with the extract of digitalis and Bland's silver-coated pills—the gelatin-coated and sugar-coated she could not tolerate in the stomach. She gained some strength, but frequent vomiting and constant gastric pain continued. She was much troubled by convulsions, which were of daily occurrence. In October of that year she went to New York at the request of her physician to receive his course of treatment. She visited his office daily, driving there from Brooklyn. Lavage was practiced three hours and a half after taking milk, on which she had been fed for seven months, but was discontinued two weeks subsequently, as the washings demonstrated the utter inability of the stomach to digest it. She was then allowed solid food, which seemed for a time better tolerated, although the gastric pain, pyrosis, etc., were much increased. On the second office visit she had an attack of hæmorrhage consisting of about two hundred and fifty cubic centimetres admixed with milk curd. This had the characteristic "coffee-ground" appearance, and persisted to a slight degree for the next two weeks. It was noticed in the vomitus which regularly occurred subsequent to the ingestion of food, and was not accompanied by any hæmorrhage at the time. This was the only hæmorrhage which occurred. The vomiting ceased and hæmorrhage stopped and was left a constipation. The bowels were moved by enemata, but were unreliable in action and the patient was suffering in the city under the general rule of the physician in New York. She gained somewhat strength and gained health, but the cardialgia increased to the degree in which food and fluids could not be retained and she was forced to leave her physician and return to the city. She was placed upon a milk diet with lime-water every two hours with the extract of digitalis and Bland's silver-coated pills—the gelatin-coated and sugar-coated she could not tolerate in the stomach. She gained some strength, but frequent vomiting and constant gastric pain continued. She was much troubled by convulsions, which were of daily occurrence. In October of that year she went to New York at the request of her physician to receive his course of treatment. She visited his office daily, driving there from Brooklyn. Lavage was practiced three hours and a half after taking milk, on which she had been fed for seven months, but was discontinued two weeks subsequently, as the washings demonstrated the utter inability of the stomach to digest it. She was then allowed solid food, which seemed for a time better tolerated, although the gastric pain, pyrosis, etc., were much increased. On the second office visit she had an attack of hæmorrhage consisting of about two hundred and fifty cubic centimetres admixed with milk curd. This had the characteristic "coffee-ground" appearance, and persisted to a slight degree for the next two weeks. It was noticed in the vomitus which regularly occurred subsequent to the ingestion of food, and was not accompanied by any hæmorrhage at the time. This was the only hæmorrhage which occurred. The vomiting ceased and hæmorrhage stopped and was left a constipation. The bowels were moved by enemata, but were unreliable in action and the patient was suffering in the city under the general rule of the physician in New York. She gained somewhat strength and gained health, but the cardialgia increased to the degree in which food and fluids could not be retained and she was forced to leave her physician and return to the city.

hypnotics, and the increased amount of nourishment taken without the slightest distress.

In the evening I was hastily summoned and found her suffering from intestinal colic—an accumulation of gas in the cæcum—an old trouble from which she had had previous attacks. Quite a distinct localized tumor presented in the right hypogastrium. She became hysterical and soon lapsed into a convulsion—the first she had had since commencing treatment. Although morphine hypodermically was administered, relief was not afforded until she came under the effects of bromide of sodium and chloral given *per rectum*.

25th.—Third examination of gastric contents made one hour after Ewald's test meal: Amount, 70 c. c.; clear in appearance; mixed with undigested bread crumbs; slight amount of mucus; no granulation tissue present; reaction strongly acid; fatty acids present, but absence of HCl.

Urine.—Amount for twenty-four hours, 1,620 c. c. On the following day she vomited and purged, the effects of becoming nervously excited, and partly because the food was probably not quite rightly prepared, as the vomitus was curdy and very sour.

May 2d.—As the patient was at this time craving solid food, and had been free from gastric distress for a month and her general condition greatly improved, the nutritive enema given at noon was discontinued, and more albuminoids allowed in the form of Mosquera's beef foods prepared by Parke, Davis, & Co. The gastric sedative was also omitted, although the glycerin and peroxide of hydrogen were continued. At this time Blaud's pills in 0.18 doses P. C. and as an A. C. pill of argent. nit., 0.015 administered. Also mistura asafetide, 60 c. c. *per rectum*, was given to control the hysterical element. The third urinalysis showed: Amount in twenty-four hours, 1,800 c. c.; color, pale-yellow; reaction, neutral; odor, urinous; sediment, phosphate; no albumin; no sugar; urea, twenty grammes, total.

Her condition continued to improve for some weeks, and the patient and her friends entertained the hope that her recovery would eventually follow.

She was allowed to get up gradually, and by the middle of May had gained in strength sufficiently to move round the house and walk a little in her garden. She manifested considerable interest in her flowers, and often remained for hours sitting in a protected place reading or otherwise enjoying herself in the open air. She partook regularly of nourishment every two hours during the day and once or twice at night. This continued until June 1st.

From our study and observation of the case, coupled with previous clinical history, the symptom group—the most important yet contradictory evidences, the absence of emesis and general improvement as favoring the diagnosis of gastric cancer, against the persistent absence of HCl in gastric contents, the accepted (pathognomonic) sign of carcinoma—I considered the weight of evidence in favor of gastric cancer. Furthermore the absence of HCl could be accounted for the grounds that she was subjected to morphine and was still often absent in chronic cataplexy.

The lack of HCl in subjects related to the gastric cancer, and cancer generally associated, for by the theory of salutatory influence, when the persistent use of the drug for a long time has so the sensibility of the entire alimentary canal. The real cause in the stomach fails to excite HCl in gastric contents as is testified to the altered position of the gastric cancer, moderate excessive hypomotility, and a subjective distress in the organ with general

nervous disturbance. Moreover, an alkaline medium favors the condition for fermentation of unprepared and non-aseptified food, part of which is propelled into the intestinal tract, there to be further favored in decomposition. Gases and ptomaines, being formed in both stomach and intestines, give rise to eructations and borborygmus, and, becoming absorbed, impoverish the blood, induce headaches, vertigo, etc., robbing the nutritive system of that pabulum upon which the well-being of the individual depends—assimilation is perverted and nutrition lowered.

The suspected ulcer was thought to be situated in the posterior wall, because of the position the patient would assume during the paroxysm of gastralgia; also from the dorsal radiation of the pain and existence of tenderness there. Moreover, when in the dorsal decubitus, with the stomach empty, she described a subjective sensation of oppression perceptible only when in this posture.

The rationale of treatment was based upon what was perceived to be the indications in the case—to allow only such foods as the stomach would tolerate in character and quantities. I early ascertained the inability of the crippled organ to perform gastric digestion owing to the lack of HCl—the natural antiseptic of the stomach; the consequent formation of the products of fermentation in the viscous acting as chemical irritants gave rise to the pain and other symptoms. Therefore the second indication at once became clear that of rendering the contents of the stomach non-fermentable. Predigested and aseptic foods fulfilled in a theoretical sense the indications present. The maintenance of the antiseptic condition by suitable and non-irritating agents, as glycerin and H_2O_2 , gave immunity from pain and lessened gastric peristole. For two months she continued to show marked and progressive improvement, when one day early in July her most pain-taking, intelligent, and very efficient nurse—a non-professional—who became an adept in the preparation of her foods, suddenly left her. This unexpected event produced in her a severe nervous shock from which, together with subsequent circumstances, she never recovered. The care which she subsequently received was not calculated to perpetuate the favorable change in her condition, and she soon relapsed into the hopeless state which the real disease, that was so well advanced, doomed her. This circumstance was but a coincidence, yet it had its effect through the nervous system, already so much disturbed. Her foods were not as carefully prepared and the old symptoms of eructations, pyrosis, vomiting, and gastralgia all quickly returned, bringing in their wake the nervous phenomena which seemed at this time intensified because of the privation of the accustomed effects of morphine on the system. It was necessary to resort to its employment again to control the pain and overcome the depression. An effort was made to substitute in a measure chloral and sodium bromide, with mistura asafetida given *per rectum* at night; but this was not followed by happy effects and had to be abandoned. Previous to the return of these discouraging symptoms the induration in the pyloric region had nearly become imperceptible, but on July 6th the patient drew my attention to a firm and slightly nodular mass about ten centimetres by four centimetres in size, of an oblong shape, which could be felt at the right margin of the median line below the xiphoid cartilage and crossing upward in an oblique direction to the left. The sensation it conveyed to the examining hand was of constricted tissue formation which was firmly immovable. Emesis was frequent and variable in appearance and characteristics. The first vomited after taking nourishment would be the food practically unchanged excepting for the odor of fermenta-

tion; that which would subsequently be evacuated would be entirely different and more decomposed, or remains of a previous day's meal; this feature at first was suggestive of one of two conditions being present—either a sacculation or stenosis.

The Fourth Urinalysis.—Amount for twenty-four hours, 900 c. c.; color, muddy yellow; reaction, acid; odor, aromatic; no sediment; no sugar; no albumin; specific gravity, 1.014; urea, 10.50 grammes, total.

July 10th.—Patient has been mostly confined to her bed for about a week with an aggravation of all her symptoms and daily losing strength.

(Edema in lower extremities and hands. The kidneys are acting badly. Urine, highly colored and very concentrated, is passed with difficulty and at long intervals. Stomach more rebellious, and vomitus often contains much mucus and has a "coffee-ground" appearance.

The skin is now assuming a characteristic yellow cachexia, particularly that of the face and arms. The sclerotics slightly icteric, and the face is emaciating rapidly, giving the patient a cadaveric appearance.

August 1st.—The stomach is enormously distended and pendulous—unmistakable evidence of partial or complete stenosis of the pyloric orifice. The hard nodular mass before referred to can now be defined as a distinct tumor lying more in the median line. General anasarca exists in all areolar tissues excepting the face; the lower extremities enormously and painfully distended, the labia so much so as to require the use of the catheter frequently. The urine highly acid and concentrated; odor rank; greenish iridescent in color response to the bile test; slightly albuminous. Heart's action more feeble and intermittent, excepting when under the effects of morphine, to which small amounts of atropine have been added. Emesis and convulsions are frequent, and attempts at deglutition induce spasm of the laryngeal muscles. She also has frequent attacks of dyspnoea and is unable to lie down, maintaining a semi-recumbent position, and being supported in bed by pillows. Stimulants and increased doses of morphine, the latter hypodermically, are freely given, as all nourishment by the mouth is soon rejected. One or two nutritive enemata are administered during the twenty-four hours, and are well retained. Slight delirium exists at times and insomnia troublesome. There is marked evidence of progressive exhaustion. A change of position will produce emesis.

The thick silvery coating of the tongue with its entire epithelium has disappeared leaving a raw and painfully sensitive mucous membrane; there is also some glossitis posteriorly.

14th. The patient has been in a dying condition for over two weeks. Life is frequently threatened from apnea. Two cubic centimetres of Magendie's solution with atropine sulphate enemata are repeated hypodermically for relief of apnea. She had a remission of the convulsions to-day which she has been free from for ten days. Purine enemata administered with atropine. Sleep very little and at times disturbed. Unable to retain nourishment by the mouth. Purine enemata, whenever the respiratory centre is excited, to be followed by the patient under the primary effects of atropine. Small portions of food and water were now drawn off by means of the catheter, and small quantities of milk were given by the rectum. The anæsthetic is administered for the purpose of relieving the patient's distress. From August 1st to the date of her death, August 19th, the patient continued in the same condition, apnea increasing in severity, and emesis had developed except the patient was unable to be modified by the hypodermic injection, the severe respiratory depression, inability to take nourishment by the mouth, and other symptoms of subjective suffering, became in-

intensified that more frequent and increased amounts of the anodynes were daily and often hourly required in humane efforts to lessen her terrible sufferings until death would kindly relieve her forever. For several days before her death she received hypodermically eight cubic centimetres of Magendie's solution of morphine (about 0.24 grammes) combined with sulphate of atropine (0.003) once and sometimes twice daily.

Pathological Report.—Autopsy made three hours after death on the body of a poorly nourished and much emaciated female aged about thirty-five years.

Lower extremities enormously œdematous; skin waxy white; face and arms of a yellow cachectic appearance; mucous membranes pale; teeth loose; the incisors long and concave on the edges.

On section of the abdomen, the subcutaneous fat was much shriveled and very scant; the muscles soft and pale; cellular tissue below the umbilicus œdematous. Peritoneal cavity contained several litres of light yellow ascitic fluid.

Diaphragm at fourth rib on right side, at the fifth on the left. Right and left lobes of the liver adherent to the lesser curvature of the stomach.

Upon separating the adhesions, which were old, a perforation of the stomach the size of a twenty-five-cent piece was found about six centimetres from the pylorus. This ulcer was surrounded by firm adhesions and a considerable amount of broken-down tissue and puruloid matter. This was in contact with the left lobe of the liver, whose concave surface was adherent, to quite an extent, to the posterior border of the stomach.

The stomach was adherent to the anterior abdominal wall and to all adjacent structures—partly to the diaphragm, the transverse colon, and also to the spleen, matting down firmly the lesser omentum, through which two other perforations existed. The adhesions were dense and tenacious between the stomach wall and the liver, into which the perforations already mentioned existed. Around this ulcer extended an area of indurated fibrous tissue in the liver substances two centimetres deep, which was white in appearance.

Of the two other perforations, one was limited by the gastro-hepatic omentum which was agglutinated to the posterior wall including a cyst or pocket filled with similar puruloid and necrotic material. The other ulcer extended into the capsule of the pancreas; the adhesions and infiltration of the neoplasm included the hepatic duct, the hepatic blood-vessels, and solar plexus, and extended through tissues that included the apex of the right kidney by firm bands of connective tissue and involving the descending portion of the duodenum below the opening of the ductus communis choledochus. Part of the parenchyma of the pancreas was also infiltrated, together with the under surface of the right lobe of the liver, lobus Spigelii, and a portion of the wall of the stomach. The greatest tumour was present in the posterior wall of the stomach near the pylorus where the perforations existed. Whether these were unhealed gastric ulcers or produced by thrombosis or malignant ulceration can not be definitely stated.

The stomach, which was greatly dilated, extended some five centimetres below the umbilicus and was distended to its full capacity. The contents were purulent, the greater portion of which was of a greenish color. The stomach wall was thickened and hard and much infiltrated with cancerous infiltration. The middle portion was clearer. The lower portion, in contact with the diseased liver, was brownish green and covered with a thin layer of yellowish purulent and necrotic matter. The amount of cancerous infiltration of the cellular structure.

The external appearance of the stomach was marked by

it is slow and simulates articular rheumatism in many respects. Unlike rheumatism, however, the heat, the swelling, the pain, and the tenderness, although close to the articular area, do not involve it. The tenderness is limited to the region of the bone close below the junction cartilage, and at this point there is a definite thickening. In articular rheumatism the swelling, the fullness, and the redness are confined to the area of the synovial membrane, and there is no thickening about the bone. The results of treatment also aid in diagnosis. The relief of the symptoms of acute rheumatism is, as a rule, so prompt under the use of salicylic acid that an increase in the severity of the articular signs, or even a lack of any improvement after a few days, should arouse suspicion and call for a more thorough and careful investigation. The diagnosis should be made as promptly as possible, for error and delay lead to lamentable results. The treatment is essentially surgical. Incision should not be delayed until the presence of pus is demonstrated. Delay allows the septic inflammation to make irremediable havoc, so that the sooner the area of disease is attacked and cleared out the better. To wait for fluctuation is to give the staphylococci and other micro-organisms full opportunity to do their worst. The incision should be through the periosteum and, if any pus is here confined, a free opening should be made. The diaphysis should be trephined to give free exit to all septic matter pent up within the bone.

MINOR PARAGRAPHS.

LITERATURE THAT MAY BE CONTRA BONOS MORES.

We have received from a Munich publishing house a circular advertising the third edition of a book entitled *Die Mittel zur Verhütung der Conception. Ein neues Mittel*. The circular announces also a new work, by the same author, called *Eine sichere Verhütung syphilitischer Ansteckung*. It is to be hoped that these books are confined strictly to the medical profession, for the matters with which they deal—how to prevent conception and how to avoid syphilitic infection—are already sufficiently inquired into by certain classes in the community.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 1, 1894:

DISEASES.	Week ending July 1.		Week ending June 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	1	5	0
Scarlet fever	1	4	10	0
Cerebrospinal meningitis	1	0	0	0
Mumps	2	0	0	1
Diphtheria	1	0	10	4
Smallpox	1	0	4	0
Total	10	5	104	5

The British Medical Association.—In the presence of the Section of Laryngology and Otology, Dr. Joseph O'Dwyer and Dr. William F. Northrup, of New York, were announced

as to take part in a discussion of The Treatment of Acute and Chronic Laryngeal Stenosis. We learn that Dr. Northrup was also to present a paper on The Diagnosis and Treatment of Diphtheria, and to demonstrate an apparatus for forcible artificial respiration, a modification of the one devised by Dr. George C. Fell, of Buffalo.

Processions and the Berlin Physicians.—The *Union médicale* says that the police authorities of Berlin have decided to follow the example of their New York brethren, and give each practicing physician of the city a card securing him the right of way through the streets while engaged in visiting patients.

Changes of Address.—Dr. Edwin Geer (Baltimore), to No. 1533 Bolton Street; Dr. W. J. George (Johnstown, Pa.), to No. 215 Horner Street.

Army Intelligence.—Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 22 to July 28, 1894:

By direction of the Secretary of War, the order assigning MCCREERY, GEORGE, Captain and Assistant Surgeon, to duty at Fort Washakie, Wyoming, is revoked.

By direction of the Secretary of War, the order assigning PRICE, CURTIS E., Major and Surgeon, to duty at Fort Custer, Montana, is revoked, and he is granted leave of absence for one month, to take effect upon being relieved from duty at Fort Porter, New York.

Naval Intelligence.—Official List of Changes in the Medical Corps of the United States Navy for the week ending July 28, 1894:

KIDDER, B. H., Medical Inspector. Ordered as member of the Board of Medical Examiners, Navy Department.

HERNDON, C. G., Surgeon. Detached from the Board of Medical Examiners, Navy Department.

BRADLEY, G. P., Surgeon. Detached from the Receiving-ship Wabash and ordered to the Navy Yard, Mare Island, California.

STONE, E. P., Passed Assistant Surgeon. Detached from the Marine Recruiting Rendezvous, Boston, and ordered to the Wabash.

STEPHENSON, F. B., Surgeon. Ordered to the Marine Recruiting Rendezvous, Boston, Mass.

Obituaries.

DR. JOHN B. ISHAM, OF PASADENA, CALIFORNIA.

Dr. ISHAM died on July 19th, after an operation upon the nose the exact nature of which is not known to us. He was well known in New York, where he was an esteemed practitioner for about fifteen years. He was graduated in the class of 1869 at Yale College, and took his degree in medicine at Bellevue Hospital Medical College in 1874. Subsequently he was an interne on the surgical side at Bellevue Hospital, and further pursued his medical studies in Germany. For several years he was associated with the late Dr. James R. Wood, and was one of the corps of instructors who assisted him with the large classes of students which that distinguished surgeon constantly had. For several years he was also an inspector upon the board of health, being engaged at the same time in general practice.

Failing health compelled him to leave New York in 1889. He went first to Manitou Springs, Colorado, and thence to Colo-

rado Springs, whence, finding that the climate was still unsuited to his physical condition, he pushed onward to the Pacific coast, and finally settled, between two and three years ago, at Pasadena, where he was engaged in practice at the time of his death.

His was a most beautiful character and disposition. Gifted intellectually far beyond the majority of his medical brethren, sincere, ingenuous, thorough in his acquisitions, he had withal a shyness and reserve that shrank from the fierce struggles of city life, which put many a man in every way inferior to him into a position of prominence that he would have adorned. But, whatever failure on the part of others there may or may not have been to recognize his merit and great worth, it was not from his lips or conduct that murmur or discontent was apparent; he had the rare moral heroism of suffering in silence, leaving only inferences for those who loved and admired him and knew his sterling worth. What a pity that in a profession in which intellect counts for so much, in which, too, sentiment and emotion are so cultivated in the relations sustained to the sick and injured, there is so often a tendency to the manifestation of the same selfishness, envy, and littleness which we find elsewhere in the *“rings”* of the world! What Dr. Stone's relations to the profession were in his California home we do not know. His letters occasionally referred in a modest manner to some operation performed, for surgery was the work of preference with him, but he was far less likely to speak of his own affairs than of the work and the achievements of others. Of his Christian faith and life those who knew him well will bear willing testimony, and those whom he honored with his friendship, though if they think of him with a sigh because the friendship is interrupted, will yet be conscious of an odor and fragrance of holiness that is as often as any testimony to the

I shall not deign to answer a word of what Dr. Senon may have to say with regard to the late Sir Morell Mackenzie, for whom he has now the presumption to take up the cudgels. This may suit his present position, but I should be quite willing to allow the whole conduct of each of us—literary and personal—toward that great man, to whom we are both mutually indebted for much of any success we may have achieved—although only one of us allows it—to be submitted to the arbitration of the whole body of American laryngologists, as represented by their association, with a very sure conviction on my own part to which of the two the verdict of loyalty and gratitude would be accorded.

Out of no disrespect for the many physicians of the United States whom I may count as my friends, I must decline to make any further rejoinder beyond giving them the assurance that on this subject as on any other on which I may have had a difference of opinion, I have endeavored to act with perfect fairness to my opponents. Wherever I have used inverted commas I have never quoted otherwise than accurately, but it is quite possible that in abstracting a case I may have changed a word here and there. If I have done so, it has never been with the intention of changing the meaning of any writer to whom I have referred. Such paltry matters are unworthy transatlantic publication—at any rate, I can be no party to a correspondence on them under the obvious disadvantages attendant thereon, and I promise that you will not have your space further trespassed on by me to so fruitless a purpose.

INDEX INDEX

Proceedings of Societies.

AMERICAN PEDIATRIC SOCIETY.

South American Mammals, found in Brazil during the Expeditions, Warrenton, 1846, Thompson, and Kirtland, May 1846, and 1847, from James L. Smith.

The Vice president, Dr. F. FORCHHEIMER, of Cincinnati, in the

The Influence of Venous Congestion on the Spinal Reflex Centers. D. H. K. RICHMOND, of New York, Kentucky, and

[illegible]

Letters to the Editor.

ON THE ALLEGED SPECIAL LIABILITY OF BENIGN LARYNGEAL GROWTHS TO UNDERGO MALIGNANT DEGENERATION AFTER INTRA-LARYNGEAL OPERATIONS

$$1, \cos \theta, \cos^2 \theta, \dots, 1$$

The Editor, The New York Medical Journal:

[illegible]

² While in agreement in the statement that going to jail daily has not had the aforementioned beneficial effect, both Sullivan and Yonkers-Alexander agree that the "front-end" effect has not had the desired effect on a monthly basis and that there is no effect on recidivism.

At the 1991 Annual Meeting, Kenneth J. Gergen invited me to the Psychological Society in London. His opening question seemed well suited to the conference: "How might the research be extended from transference to the practice of the therapist by all the therapists who succeed the last of which?" The question was well posed. Since the question is the question of transference,

stipation which depended entirely upon the normal anatomy of the colon. The alvine evacuation under these circumstances was dry and insufficient, the watery element having been absorbed in the reduplication of the colon. He then reported the case of a boy, five weeks old, who from his birth had been constipated, and had suffered from cramps. When the child was first brought to him it appeared to be fairly healthy, but was in great pain and was straining and kicking. Vomiting had existed for two days previously, and examination showed that the abdomen was swollen and tympanitic. There was an indistinct elongated swelling to be made out across the abdomen, two inches above the level of the umbilicus. The child's temperature was 102° F. The speaker said that he had found as a result of experience that peritonitis in early childhood was generally septic, and by a process of elimination and exclusion in this case he had arrived at a diagnosis of acute intestinal obstruction due to impaction of feces in a reduplication of the sigmoid flexure of the colon. This condition was frequently misunderstood and neglected. In the milder cases it was trivial; in the severer grades, however, it was very serious, and might even jeopardize life. The ascending and transverse portions of the colon were very short in the fetus and in the newborn, the descending portion being very long proportionately. This resulted in the descending colon being crowded down into a narrow pelvis and forming a number of curvatures instead of one sigmoid flexure. The intestinal contents were therefore retarded, the fluid was absorbed from the feces, and the feces were thus rendered hard and dry, so as to form an obstruction. The treatment of such cases was simple, and consisted in distending the lower part of the bowel with enemata, so that the reduplication might be untolded from below, and the patency of the bowel thus restored. High rectal injections should be given, and it might be necessary to continue the treatment for a number of years before the proper relation between the colon and the sigmoid flexure was established. Crying or anything tending to increase the abdominal pressure should be avoided, and the child should be kept quiet.

Dr. W. L. STODOLSKY, of New York, said that by a persistent use of ox-gall and sweet oil with oil of turpentine, where there was a hard scybulous mass present, he had been able, both in infants and in adults, to cause a free movement from the bowels.

Dr. F. H. THOMPSON said that in many of these cases depended largely upon the undue hardness of the feces, the free absorption of water should not be neglected, as this would tend to increase the solidity of the fecal material.

Dr. F. H. THOMPSON, of Cincinnati, said that the osmotic equivalent of the intestine of the adult was equal to ninety, so that in water was osmotic. A natural osmotic action would tend to draw out the water from the intestine, and this would tend to increase the solidity of the fecal material.

A Case of Malignant Measles was reported by Dr. J. C. WILSON, of Philadelphia. The patient was a young child, one of three children of a mother who had had three of the measles previous to this one. He had been ill several days at this time when he suddenly became sicker, the surface of his face, neck, and arms and legs were covered with a profuse eruption, and the child showed a general prostration, vomiting of bile, and a general prostration from which he never recovered. There were some of the most prominent features of the disease, such as the eruption on the face, neck, and arms and legs, and the general prostration. The eruption was of the type of the measles, and the general prostration was of the type of the measles.

The eruption was of the type of the measles, and the general prostration was of the type of the measles. The eruption was of the type of the measles, and the general prostration was of the type of the measles. The eruption was of the type of the measles, and the general prostration was of the type of the measles. The eruption was of the type of the measles, and the general prostration was of the type of the measles.

of the patient rapidly became worse after the development of this eruption, so that at eleven o'clock on the following day his condition was really desperate. His temperature was then 99°, and he was almost in a condition of collapse. Reaction took place under appropriate treatment, but he continued in a condition of stupor bordering on coma. There was no vomiting or rigidity of the neck; the pupils were moderately and symmetrically dilated, and responded to light. During the night the temperature rose steadily, and by six o'clock in the morning it had reached 102.6°. By the evening of that day it had risen to 105.2°. During the day a dusky-pink maculo-papular eruption developed on the wrists and on the side of the face and neck, and this was associated with a slight conjunctivitis, but without any cough or sneezing. Physical examination showed very slight bronchitis. A condition of delirium passed soon into one of stupor, but still the head could be flexed on the chest and moved from side to side without difficulty. A specimen of urine obtained at this time with the catheter was examined and found to be acid, to have a specific gravity of 1.029, and to contain a small quantity of albumin. There was no sugar present. At this time his pulse was between 100 and 110, and was very feeble, irregular, and intermittent; the respiration varied between 38 and 46. By the evening of the following day the temperature had risen to 105.6°, and the stupor had deepened. At nine o'clock he died. An autopsy was not permitted. During his illness Dr. A. C. Abbott had examined a specimen of blood taken from one of the large petechiae, but had found neither bacteria nor any other form of parasite.

This case, the speaker said, was chiefly of interest from the standpoint of diagnosis. The diagnosis between measles on the one hand and typhus fever, purpura fulminans, cerebro-spinal fever, and variola on the other hand was to be made. It seemed that typhus fever could readily be excluded, for there had been no cases of this disease reported in Philadelphia for a long time previous. Against the existence of purpura fulminans were the facts that the patient had been in excellent health previously, and that the disease had come on suddenly with pyrexia and the rapid development of a universal petechial eruption in which the spots had not increased in number or in size. There was also no bleeding from the mucous surfaces, and, finally, there was the appearance of a distinct rash on the third day. The absence of vomiting and of painful rigidity of the muscles of the back of the neck were important facts arguing against the existence of cerebro-spinal fever. There had been no known exposure to small-pox, the characteristic eruption of this disease was not present, and the patient had been vaccinated previously. The direct diagnosis of measles rested on the exposure to this disease, the faint and limited but distinct maculo-papular eruption, its crescentic arrangement, and the existence of fever.

Dr. F. H. THOMPSON said that in the case of measles the members should present their views in regard to the frequency of second attacks of measles.

Dr. F. H. THOMPSON said that he had been several times in believing fully in the occurrence of measles several times in the same individual.

Dr. F. H. THOMPSON said that he had been several times in believing fully in the occurrence of measles several times in the same individual.

Dr. F. H. THOMPSON said that he had been several times in believing fully in the occurrence of measles several times in the same individual.

Dr. F. H. THOMPSON said that he had been several times in believing fully in the occurrence of measles several times in the same individual.

mon for an individual to have measles for a second time, and not uncommon for him to have a third attack, to say nothing of the occurrence of German measles between these attacks.

Dr. SEIBERT said that in an extensive dispensary practice he had never had the opportunity of making the diagnosis of measles twice in the same child. He did not think it impossible for a person to get the infection twice, but it was not quite so frequent, in his opinion, as some would have us believe. He said he had always been able to distinguish it.

Dr. WILSON said that he had had in constant association with him for five days of the patient's illness Dr. Pepper and Dr. Da Costa, of Philadelphia, and that they had all agreed in the diagnosis. Neither Dr. Pepper nor Dr. Da Costa, however, had ever seen such a case occur in a house epidemic.

(To be continued.)

Book Notices.

Lectures on Surgery. By DAVID W. CHEEVER, A. B., M. D. (Harv.), Professor of Surgery, Emeritus, in the Medical School of Harvard University; Senior Surgeon of the Boston City Hospital, etc. Boston: Daniel & Upam, 1894. Pp. viii-591.

The author states, in his brief preface, that these didactic lectures are only meant to be outlines of some surgical subjects. He disclaims any pretension to a complete treatise on surgery in this volume, as the surgical course at the Harvard medical school includes other teachers and varied departments. But the long experience of which this volume is the fruition is expressed in the dedication—"To thirty-three medical classes."

These are unwritten lectures printed from stenographic reports, and consequently possess the various features of didactic teaching. The first lecture, on general considerations, contains a truth too frequently forgotten to day: that, "although the operative part of surgery is brilliant, it is not the best part, nor does it require the highest attributes of mind." The author shows that surgery can have but two objects: to relieve suffering and to prolong life. If it does not seek to accomplish one of these objects it is on a false aim. He calls attention to the fact that anatomy and physiology are the basis of surgery, and that the great moving factor in all surgical judgment. This is more to be regretted than in some other than the English literature, for the Anglo-Saxon mind has a more humane tendency than the Latin or the German mind.

The lecture on anesthetics contrasts the effects of and indicates the proper use of the various anesthetics, and the proper use of the various anesthetics.

The same lecture is on the subject of the use of the various anesthetics, and the proper use of the various anesthetics.

The same lecture is on the subject of the use of the various anesthetics, and the proper use of the various anesthetics.

But it is a gratification to think that at this well-known medical school the pupils are trained in a sound pathology and practice in surgery that will enable them to be safe, if not brilliant, ministrators to the injured and diseased.

These lectures deserve a wider audience than that of the students at the school where they were delivered.

Essentials of Anatomy, including the Anatomy of the Viscera, arranged in the form of Questions and Answers prepared especially for Students of Medicine. By CHARLES B. NANCY, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan, Ann Arbor, etc. Fifth Edition. With an Appendix on the Osteology of the Human Body; the whole based on the Last Edition of Gray's Anatomy. One Hundred and Eighty Fine Illustrations. Philadelphia: W. B. Saunders, 1894. Pp. x-17 to 388. [Price, \$1.] [Saunders's Question Compend.]

The fifth edition of this question compend has been enhanced by the addition of a series of osteological drawings, taken from Gray's *Anatomy*, that are intended to make this work of greater service to the student. That the work has gone through editions amounting to fifteen thousand copies is an evidence of popularity that needs no comment.

Essentials of Practice of Pharmacy. Arranged in the Form of Questions and Answers. Prepared especially for Pharmaceutical Students. Second Edition, revised. By LUCIUS E. SAYRE, Ph. G., Professor of Pharmacy and Materia Medica, of the School of Pharmacy of the University of Kansas. Philadelphia: W. B. Saunders, 1894. Pp. ix-17 to 200. [Price, \$1.] [Saunders's Question Compend.]

In this edition the matter has been revised and made to correspond to the United States Pharmacopœia of 1890. There have been added sections entitled An Outline of Drug and Plant Analysis, Structural Formulae of Organic Carbon Compounds used in Medicine, Pharmaceutical Testing of Inorganic Chemicals, and Problems in Alligation and Specific Gravity.

The result of the revision and of the additions is to give us a work considerably more valuable than the first edition, and, while we frankly say that the use of technical catechisms is in our opinion both radically wrong and in the highest degree superficial, yet this volume, compared with others of its class and not judged as a text-book, is a work of considerable excellence.

To most of the questions the book contains there are corresponding answers, but there are frequently inserted unanswered "research questions" which are intended to stimulate the student to investigation. Such introductions we think are scarcely wise or advisable, for to the lazy student they are in every way inadequate, and to the serious and earnest worker entirely unnecessary.

A Manual of Diseases of the Nervous System. By W. R. GOWEN, M. D., F. R. C. P., F. R. S., Consulting Physician to the University College Hospital; Physician to the National Hospital for the Paralyzed and Epileptic. Second Edition, Revised and Enlarged. Vol. II. Diseases of the Brain and Cranial Nerves. General and Functional Diseases of the Nervous System. With One Hundred and Eighty-two Illustrations, including a large number of Figures. Philadelphia: P. Blakiston, Son & Co., 1893. Pp. 1069. [Price, \$4.00.]

This enlarged second volume of one of the most commendable text-book owners, is a welcome addition to the necessity felt by its author of a thorough revision of the original subject matter, and

to the numerous additions made in recent years to neuropathological science. To those who have not as yet consulted its pages it is well to mention how much the author's scientific simplicity, demonstrated equally by the skillful arrangement and by the treatment of the various topics, has to do with the student's clear comprehension of this most difficult branch of pathology.

Discussions on the external conformation of the cranium and of the brain convolutions are succeeded by considerations of the microscopical character of the nervous tissue and of the origin and physiological function of the various nerves and centers. The symptoms of brain lesion are divided by the author into those that are attributable in general to any disorder of the brain, irrespective of its localization, and such as are more directly dependent upon the special function of the injured part. Symptoms arising from reflex action or from secondary affection are analyzed and their importance in the formation of a diagnosis is demonstrated.

The possible variants presented by any given disease are frequently illustrated by example, and the necessity of remembering the possibility of any stated pathological condition awakening a secondary diathesis, such as hysteria, is emphasized.

Numerous drawings illustrate the text, including the unsurpassed and well-known ones of Paul Richer, of the attitudes assumed by the hysterical patient when in the convulsed or contracted state. The author must, however, have introduced a poor arrangement into the arrangement of Richer's illustrations, as, instead of being inserted in the text as in the original, we find them here, for the most part, superposed in such a manner that the typical form is followed in vertical columns by the atypical, thus affording in one glance a bird's-eye view of all the possible varieties. We regret the necessity felt by the author of condensing his text within prescribed limits.

Illustrations de Médecine. By ROMANUS BOISSEY, M. D., CHIRURGE. M. R. C. P. Lond. London: H. K. Lewis, 1894. Pp. 35.

True pathology has been of late in France, and in France, to the author's course in being, as set forth in a course and in the manner the advantages of the antiseptic principle in midwifery and the puerperium, which have resulted since it has been in operation. After describing the advantages and disadvantages of the antiseptic principle, the author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

Principes de Médecine Pathologique. By ROMANUS BOISSEY, M. D., CHIRURGE. M. R. C. P. Lond. London: H. K. Lewis, 1894. Pp. xiii-504. [Price, 2s. 6d.]

The principles of the antiseptic principle in midwifery and the puerperium, which have resulted since it has been in operation. After describing the advantages and disadvantages of the antiseptic principle, the author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

The author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

Principes de Médecine Pathologique. By ROMANUS BOISSEY, M. D., CHIRURGE. M. R. C. P. Lond. London: H. K. Lewis, 1894. Pp. xiii-504. [Price, 2s. 6d.]

The principles of the antiseptic principle in midwifery and the puerperium, which have resulted since it has been in operation. After describing the advantages and disadvantages of the antiseptic principle, the author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

after. We have read it through and can say unqualifiedly that it is a book which is worthy of careful reading, especially by those who are beginning their experience as gynecologists or as obstetricians. Some portions of it, notably those which deal with embryology and the pregnant state, would be treated with more appropriateness in a manual devoted to obstetrics. The style of the work is argumentative and philosophical, and, while we do not in all respects agree with the author in his propositions and conclusions, there is a tone of fairness which pervades them that is exceedingly attractive. Much that is of importance might be added to the book. Perhaps it may be made the basis of a more extensive work at some future time.

Éléments d'anatomie pathologique. L'Inflammation. Par MASSON LETULLE, professeur agrégé à la Faculté de médecine de Paris et médecin de l'Hôpital Saint-Antoine. Paris: Georges Masson, 1893. Pp. xi-531.

The author states that these studies are the result of the work necessary for the preparation of the course in pathological anatomy that his duties as associate professor have required him to give during the past four years.

The volume is divided into four parts. The first considers the connective and vascular tissues in inflammation; the second the epithelial tissues in inflammation; the third the general pathological anatomy of inflammatory processes; and the fourth the technique of histo-pathological examinations.

Naturally the preliminary considerations require an examination of Cohnheim's theory, which is critically and fairly reviewed, with a description of the law of diapedesis, of the anatomy and physiology of the white corpuscles, and of the rôle of the fixed cells, of the endothelium, and of the capillaries in inflammatory processes.

A chapter is devoted to the consideration of the increased diapedesis of the white blood-corpuscles in all forms of inflammatory processes. There is a chapter on pus and suppuration that describes the histology of pus, the mode of formation of purulent collections, and the methods of eliminating pus. The chapter on inflammatory exudates surveys this subject in general, and contains special sections on pericarditis, pleuritis, and ascitic effusions; while in a subsequent chapter the author places stress on the diagnostic value of a chemical study of these effusions.

Five chapters are devoted to the general pathology and the acute and chronic degeneration of epithelium.

Three chapters are given to the consideration of inflammation, respectively, of the connective tissue, of the epithelial tissue, and of the endothelial tissue.

The book is written in a clear and concise style, and will be found of great value to every pathologist.

The author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

The book is written in a clear and concise style, and will be found of great value to every pathologist.

Principes de Médecine Pathologique. By ROMANUS BOISSEY, M. D., CHIRURGE. M. R. C. P. Lond. London: H. K. Lewis, 1894. Pp. xiii-504. [Price, 2s. 6d.]

The principles of the antiseptic principle in midwifery and the puerperium, which have resulted since it has been in operation. After describing the advantages and disadvantages of the antiseptic principle, the author has, in the course of his work, given for corrosive sublimate, but without giving sufficient weight, as it seems to me, to the danger of the use of this substance.

The commenters did not respond to my different use because the thing was different in nature. The response is almost that all

For the Journal of the Association, we will publish only such papers as appear in the program book that have been accepted for presentation.

Lectures and Addresses.

GLYCOSURIA
IN CONNECTION WITH APPENDICITIS;
DIABETES MELLITUS.

A CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA POLYCLINIC,
Philadelphia, Pa., 1894.

By SOLOMON SOLIS COHEN, A. M., M. D.,
PROFESSOR OF CLINICAL MEDICINE AND THERAPEUTICS.

GENTLEMEN: By a curious coincidence, having promised to speak to you to-day concerning diabetes mellitus, I have just received a copy of the *International Clinics* for January of this year, in which is reported a lecture on the Treatment of Diabetes that I delivered here quite a long while ago, November 21, 1892—the delay in publication being my own fault—when three patients were exhibited before the class, among them Mrs. McB., who is here to-day, and Mrs. M., to whom, as we had not seen or heard from her for some time, our chief of clinic, Dr. Riesman, wrote asking her to come and report. Before reading the answer received from Mrs. M.'s son, I will read you something that was said concerning her in the lecture referred to:

"There is present in the left mamma, as a gradual growth of two years' duration, a hard mass, which my colleague, Professor T. S. K. Morton, believes to be carcinoma. Operation is deemed inadvisable because of the presence of sugar in the urine." It is the view of many surgeons of the greatest experience and soundest judgment that persons having diabetes mellitus should not, as a rule, be operated upon, except in an emergency, to save life which would be lost certainly if the operation were not attempted. Other surgeons do not go so far as this, but lay down certain indications and counter-indications for operation upon diabetic patients which we will speak of later. In a disease like carcinoma, however, in which there is no certainty of cure by the operation, and the worst that can happen to the patient is to die in the course of time by the carcinoma, operation is entirely counter-indicated in cases in which sugar is found in the urine.

As stated, we wrote to Mrs. M., asking her to come to the clinic to-day. She is not here, and we have received the following letter from her son:

"Dear Sir:—Mrs. M., who formerly visited your clinic, has been dead since November 21, 1892, having undergone an operation for cancer in the breast."

The operation was declined here on account of the presence of sugar in the urine. Some one might understand that the result was just what should have been expected.

The patient, Louis G., who is here to-day, is a diabetic of the same point. He is referred to the clinic by the physician, Professor T. S. K. Morton. Firstly, let me say that I am not a case of chronic appendicitis. Dr. Morton has placed that part of the diagnosis to you so that I need not now state facts.

The patient having come into the hospital for operation, it seemed to me to be fairly advisable, the fact being that

of this hospital, both in its medical and surgical wards and clinics, was carried out, and his urine was examined. Sugar being found therein, Dr. Morton declined operation,* just as he did in the case of Mrs. M., because he believes that operation is not usually advisable in the case of patients with sugar in their urine, unless there is an emergency which can not otherwise be met.

At present this man, Louis G., seems to be doing fairly well. Should acute symptoms recur, so that his life is threatened by them, surgical intervention would be perfectly justifiable; because, under the circumstances, he would have a fair chance of surviving the operation, and he would have little chance of surviving the condition for the cure of which the operation was undertaken. The balance of probabilities would be in his favor.

The conditions in this case are not like those in carcinoma, in which an operation could only be palliative in any event; in this case the operation would be curative. It would add nothing to first risks, because without the operation he would be in great danger, and he would have at the worst one chance in two of survival from the operation, while he would not have one chance in a dozen of survival without the operation. Therefore, if at any time the threatening conditions should recur, I would strongly advise this man to undergo operation; but I would not operate upon him while he remains so comfortable as he appears to be at present.

We now inquire concerning his apparent diabetes. This is our first opportunity to question him.

Q. Did you know when you came here that you had sugar in your water? A. No.

Q. Tell us your name, age, occupation, and nationality? A. (through interpreter). Name, Louis G.; age, forty-five years; occupation, laborer; a native of Posen in Poland.

As he speaks poor English, we shall have some difficulty in communicating with him, and will leave mere routine details to be supplemented later by the clinical assistants.

He says that his health had been fair until the present trouble began some five months ago. He then noticed soreness in the right iliac fossa, but paid no attention to it for some time. The trouble increasing, he applied to a hospital, where operation was advised, but was refused by him. His pains subsided until a day or two ago, when he was advised to enter this hospital for operation. Dr. Morton diagnosed subacute appendicitis. You can still feel a sausage-like mass in the iliac region. The patient was put to bed and his bowels kept open by salines. One to two per cent. of sugar was found in the urine, but no albumin. The operation was postponed, and the man now comes before us for treatment.

I am not an expert whether there were but very slight cases entering to the presence of sugar in the urine, because I think that, just as in the case of Mrs. M., he has a chance for us to do what that person has not.

*Should these symptoms be observed in the case of a patient with appendicitis and diabetes, it is necessary to be very cautious in the choice of treatment.

suffer from diabetes without being at all conscious of it, or without offering any symptoms that would lead the physician to suspect the condition unless he was very much on the alert for cases of diabetes through having seen many of them. It is not a common disease, although we usually have two or three cases a year at this clinic. We seem now to be enjoying a "run" of them, but in a majority of clinics diabetes is one of the very rarest of diseases.

Now, let us see about his symptoms. Mrs. McB., when she came here, did not know that she had diabetes, but came complaining of pruritus.

Q. Have you any itching? A. No.

Q. Do you ever have boils? A. No.

Q. Do you pass a great deal of water? A. Three times a day.

Q. Do you have to get up at night to pass water? A. No.

Q. What is the record since he has been in the house? A. He passes about sixteen ounces a day.

Then, with such small quantities of water, the case can not be called one of diabetes; it is a case of *glycosuria*. Diabetes implies increased urination. Thus we have *diabetes insipidus*, or *polyuria*, in which are passed large quantities of water which does not contain sugar; or *diabetes mellitus*, in which the increased amount of urinary water contains an abnormal quantity of sugar. This is a case of *glycosuria* or saccharine urine, without diabetes. We must look a little more carefully into the subject, and may perhaps find reason to modify our view as to the advisability of a surgical procedure.

When scanty urine occurs in conjunction with high specific gravity, there is a liability to mistake uric acid and urates for sugar when the test is made with Fehling's solution. This mistake has not happened, however, in the present case. Professor Leffmann has supplemented the house analysis by polariscopic and chemical tests. The matter is simply suggested to me by the scantiness of the

urine.

Q. What is the specific gravity? A. 1.046.

A low specific gravity. This is still more unusual—to have a low specific gravity in connection with sugar, and, moreover, with small quantities of urine. This case requires some special study. Apparently there is an hepatic and perhaps a renal failure. The amount of urea passed is below normal and the kidneys are not stimulated to their work. Hepatic disease, pyelophlebitis, and abscess may result through portal infection following appendicitis. We cannot be confident of it here, but it must be borne in mind.

Q. Are you thirsty? A. Sometimes.

Do there any be a thirsty, wants a great deal of water?

Q. Do you sweat? A. Sometimes he sweats, but not much.

If a portal abscess is great deal, a matter of course the quantity of urinary water will be diminished. And the quantity of urine passed is below normal and the kidneys are not stimulated to their work. Hepatic disease, pyelophlebitis, and abscess may result through portal infection following appendicitis. We cannot be confident of it here, but it must be borne in mind.

On casual inspection, he exhibits some of the symptoms of vaso-motor ataxia. This and diabetes are very often associated, and in such cases there is frequently a gouty diathesis. We have no special record as to the urates or uric acid in this man's secretions.

Q. Do you feel weak? A. Yes.

Q. When did you first begin to feel weak? A. Only for about two weeks.

Q. Before that you felt pretty strong? A. Yes.

In this case, then, there is no history of gradual weakness, which is one of the very early symptoms of ordinary cases of diabetes. The patient will complain of languor and disinclination to work long before sugar can be found in the urine.

Q. Have you indigestion? A. For five or six months he has complained of a sense of discomfort in the epigastrium and palpitation of the heart; had nausea some weeks ago.

This may have been due to his appendicitis; it is difficult to decide.

Q. Do you have vertigo? A. Four or five weeks ago he complained of vertigo.

That, too, we must throw out, as it is subsequent to the onset of the appendicitis.

Q. Are you strong? A. Not now.

Let us see how the knee-jerks are. Right and left both good; a little lively, if anything. In cases of long, progressive diabetes diminution or loss of the knee-jerks is quite common—a symptom attributable to neuritis, multiple neuritis being one of the conditions which the presence of sugar in the blood, like that of alcohol, lead, arsenic, and other toxic agents, gives rise to. Sometimes the symptoms are sensory only—neuralgia rather than neuritic.

Q. Are you very hungry? A. He used to eat one meal a day.

He certainly has not exhibited bulimia if he has been satisfied with one meal a day.

Q. How many do you eat now? A. Sometimes two meals a day while here in the hospital. Before coming here, only one meal a day for about three or four months. Sometimes he takes one meal; sometimes two. When he takes two, he does not feel so well; he has symptoms of indigestion.

Q. Did you eat more than usual; did you have craving for food all the time? A. He has not at any time had an abnormal craving for food. He often has a desire for some special thing.

Q. Are you very fond of sweet things? A. He is not overfond of sugar and sweet things.

This error of metabolism, then, is not due, as in some persons, to the over-consumption of sweet things, because he has not a special craving for them and takes sugar only occasionally. To sum up, he has not had bulimia or, as it is sometimes called, polyphagia; he has not had polydipsia, and does not at this moment exhibit polyuria. There is some feebleness and there is a degree of emaciation, with the chronic indigestion and the acute inflammation, but the history of restricted diet, sufficiently account for these symptoms. Thus far we have established a case of glyco-

suria and not a case of diabetes. But let us be perfectly satisfied as to the quantity of water passed before we discuss the probable cause of the glycosuria.

Q. Please make sure of this point: Did he pass more water before his entrance to the hospital than he is now passing? A. He is sure he passed much more water before admission.

Q. How much more did he pass in twenty-four hours before he came here than now? A. About twice as much.

That is, about a normal quantity.

Q. Is he passing large quantities of water by stool? A. Rather large, because of the salines.

This may account, then, for the diminution of water.

Examination of the lungs and heart shows nothing abnormal. The thyroid gland is apparently normal. In the abdomen we find only the conditions already described. The coated tongue and dyspeptic symptoms prove nothing; he tells us that he has no more difficulty in digesting fats than with other foods. No fat has been found in his stools while here. There is no history of jaundice, no symptom or sign pointing to liver or pancreas; as to the nervous system, we have noted only slight vaso-motor signs and some exaggeration of reflexes; this indicates a neurotic condition but no definite disease.

Probably there is a reflex or mechanical disturbance of the solar plexus, which in a predisposed subject produces this symptom.

We have therefore established simply a case of glycosuria, for which we have found no cause other than the appendicitis; and we fail to find diabetes. At the same time, the mere fact that there is sugar in his urine makes us pause as to the advisability of operation, on account of the indisposition of wounded surfaces to heal when that condition is present. Nevertheless, this case does not present the same contraindication of operation as though we had all the symptoms of diabetes.* We shall study this man's urine for a week, uninterfered with by medication, before we arrive at a positive conclusion concerning him; we shall have his eye ground examined and note the digestive conditions more carefully; but I believe our present

opinion will only be confirmed by the more exact data we shall obtain.

Do not misunderstand me that all operative procedures turn out badly in the subjects of diabetes. Surgeons have collated statistics showing that the majority of diabetics submitted to various operations for various conditions recovered. Nevertheless, it must be remembered that diabetes mellitus is among the conditions interfering with the ability to recover from ether or chloroform narcosis, as well as with the recuperative power in general, and thus adds to the gravity of operation in every case. The general condition of the individual patient must be considered. The nature of the condition demanding interference, and the character of that interference, also must have weight. Operation must not be done unless necessary to save or prolong life, and unless the patient has preserved a fair degree of vigor, nor should it be done unless the chances of good result, apart from the diabetes, are sufficiently promising to compensate for the increased risk of death.

Now we will look at our other patient.

CASE II.—Mrs. McB.'s urine, which she brings to-day, has a specific gravity of only 1.010. No albumin is found; and while the Fehling solution is colored green, there is no deposit at the bottom, and no red precipitate which would indicate positively the presence of sugar. For further assurance, we will ferment the urine. Very small quantities of sugar sometimes turn Fehling's solution only green, and not red. We are sure that our Fehling's solution is good, and is not spoiled by keeping, from the fact that we keep the copper solution and solution of alkaline tartrates in separate phials, and mix them as occasion requires.

This patient came to us November 24, 1892, for relief of backache. I will not read her previous history in full. The principal points were complaint of pruritus vulvæ, and of the vaso-motor symptoms connected with the menopause.

Q. Have you finished the change of life now? A. No, sir; still in same condition.

Although a local condition, cervicitis with acrid discharge, seemed to account for the itching of the genitalia, we were not satisfied until we had made an examination of the urine, which disclosed the presence of sugar. I want to mention this again to insist upon the necessity of examining for sugar in every case that comes to you, whether of backache or headache or toothache, and also to impress upon you the great significance of pruritus: pruritus vulvæ in the female, pruritus of the urinary organs in the male, and in both sexes, pruritus ani, or sometimes general pruritus.

Q. How much water do you give now? A. Four quarts and half a pint.

This is a multi-volume collection.

From the published record it appears that this case was treated with levamisole and streptomycin. Levamisole was given as a fluid suspension (levamisole suspension, LeVetrol, or that agent was formerly prepared in a suspension form of levamisole) and streptomycin (the latter agent) in its levamisole marked powdered light. The same case is noted, derived from the fact that it is defined the posterior ear to the left while previous to it is commonly

turned the polarized ray to the right, and hence received the name of dextrose. More recent investigations have shown that the chemical composition of levulose differs fundamentally from that of dextrose, notwithstanding the identity of their empiric formulæ. Dextrose belongs to the aldehydes, while levulose is classified among the group of ketones, and this difference of chemical relation probably accounts for their different behavior in the system. It would appear, in other words, that the fault of metabolism by which the organism in cases of diabetes fails to assimilate amyloids and aldehydes does not extend to ketones, and thus the patient is able to take the latter form of carbohydrates. As a mixed dietary is necessary to good health, and as the craving for sweet things is satisfied by levulose, it will be seen what a boon this substance is to diabetics. The great drawback to its extensive use is its high cost. I have given it in quantities as high as four ounces a day. Dr. Leffmann has made careful chemical analyses of the urine of these patients for prolonged periods, and in no case has he found the secretion of sugar increased. He finds neither levulose nor an increased quantity of dextrose secreted by patients who are taking levulose. The importance of this, let me repeat, lies in the fact that we can give patients like Mrs. McB. sugar which they can use *ad libitum*, and thereby satisfy a craving for sweets which is natural; but the advantage of the drug is more particularly marked in the case of those patients who are suffering from the more severe forms of diabetes, in which the nutrition suffers in the first place from the disease, and in the second place from the withholding of a form of aliment which is necessary to the production of heat and of adipose tissue. It is true that we endeavor to supplement this loss in the case of the class of patients to whom we refer by the increased administration of oils and fats; but that does not altogether answer the purpose. And, having in levulose a carbohydrate the empiric formula of which is exactly identical with that of dextrose, though its rational formula differs from the latter, we are able to give the patient a carbohydrate aliment absolutely unobjectionable, from which he can evolve heat and which goes to the building up of his tissues. That it is assimilated, that it does go to the production of heat and to the forming of tissue, is shown by the fact that we are unable to recover it either in the feces or in the urine. Therefore it is used in the economy; the proof is definite. Levulose is unfortunately sold under a trade name, but I never prescribe it under the trade name. The druggists to whom my patients go buy levulose where and under what name they choose, but they dispense it upon prescription under its proper name. The manufacturers, it is true, make no secret of its composition, but I entirely disapprove of so-called trade names and drug monopolies. They are opposed to science and to progress and open the door to serious abuses.

Most patients are permitted to take levulose in such doses as they wish; but persons are not exempt from all economic purposes, and in addition to take about two drachms daily, and to make the water quantity prescribed less than one ounce. One patient, a woman

also, but of quite an opposite type to Mrs. McB.—a thin, nervous, excitable person—increased in weight very remarkably under the treatment with levulose. All other forms of carbohydrate were excluded from the diet, with occasional exceptions in favor of bread and potatoes. You will never find a patient that will get along without bread. Even if one tells you that he is doing without bread, he will eat it on the sly; and it is all right that he should do so; we have to face facts and not theories. All gluten bread is “n. g.”—that sums up the whole question. Soya bread I have tried to have made and found it impossible. I once got a lot of soya flour, but none of the patients could use it. I also imported some soya biscuit, but under our unwise tariff legislation it cost so much to get it through the custom house that I could not afford to repeat the experiment. As soya beans grow only in Japan, and no one in America makes the biscuit, I fail to see who benefits by this prohibitive duty. We are for the present thrown back upon ordinary bread in restricted amounts. Let your patient take not more than six small slices of bread—about three ounces—a day; if it can be cut down to less, so much the better, but let that be the maximum; and once in a while let the patient have a big roasted mealy potato. The patient will relish that, and if you let him have a feast of one potato in this form once or twice a week, being careful to abstain therefrom the rest of the time, no harm will be done.

Most writers on the subject of diabetes prohibit the use of milk. I think this very unwise; I allow my patients to drink all they want. I would rather have them take milk than too large quantities of meat. With such patients as Mrs. McB., and most of the stout patients, little meat should be given, because in most of these cases there is a uric-acid diathesis, and lithæmia is a provocative to diabetes. How, I don't know; probably, I think, by the irritation of the vaso-motor centers. I believe that that will prove to be the explanation of the connection between lithæmia, vaso-motor ataxia, and diabetes—that the uric acid or some associated toxine irritates the vaso-motor centers, and they in turn give rise to a disturbance of hepatic circulation which is represented by diabetes. But be that as it may, the practical effect is that if you can diminish the uric-acid formation in your patient you diminish the amount of sugar in his urine. Butcher's meat is, above all things, the article of diet which mostly gives rise to uric acid, especially when the patient does not take sufficient exercise; and I think that milk, although it contains lactose, is far preferable to meat as forming the bulk of the diet. Indeed, I have found some diabetics able to dispose of lactose itself, one or two ounces daily, without increase of glycosuria and without recovery of lactose in the urine; so that, instead of restricting milk, I encourage the patient to take it. The fat of the cream is also helpful. Fish is entirely unobjectionable; and eggs, where there is not too much uric acid, are usually unobjectionable. I cut off sugar absolutely—ordinary cane sugar and all malted preparations—anything that contains any form of dextrose. Levulose is admitted in this class of patients. Saccharin is not given, because, although it has a sweet taste, it has no nutritive value, and it often tends

to impair digestion, producing dyspepsia. Green vegetables should also be given—lettuce, cabbage, sorrel, spinach, cresses, onions (especially the green shoots, but also the bulbs), etc. Although they do contain small amounts of starch, the amount of other vegetable products which they contain so far overbalances the starch that the advantage lies on their side. They are also advantageous from the fact that they contain certain salts of alkaline bases—the organic acids and the alkaline bases being necessary to keep the blood in a pure condition and alkaline. This brings us to a point upon which special stress should be placed in the medicinal treatment of all classes of cases, both stout and lean: *keep the blood alkaline*. Keep the urine at least neutral; do not let it become acid. To promote this I prefer strontium bromide to any other of the agents I have used, because it interferes less with nutrition than salts of potassium or sodium. Sometimes I give lithium salts or so-called lithia waters. Occasionally these patients will develop rheumatic pains. I use the word "rheumatic" here in the general, and perhaps often incorrect, sense. Sodium salicylate should then be given. This is used by some as a specific remedy in diabetes. That is not my own experience; but I do find it useful occasionally under the conditions I have named, when it may be given in large doses, such as forty or fifty grains a day; or small doses—as small as fifteen grains a day—according to circumstances. I now give it in capsule, because that overcomes the objection of some to its taste, the capsule being followed with a large draught of water.

I do not restrict the amount of water taken by diabetic patients. Let them drink all the water they want; it helps to wash out the uric acid and other *débris*, and supplies to some extent the loss of water incident to the disease. And when patients with diabetes are inclined to take small quantities of water, I encourage them to take larger quantities, because it is necessary.

Besides the general management of the case, there are in individual cases special lesions or symptoms that need watching, and sometimes therapeutic intervention. Mrs. McB. has a tendency to constipation, and her heart is dilated—two points that need especial care. We must *quies* both her a little.

Q. Mrs. McB., can you tell me what your special complaint is just now? A. I did not feel well before my attack came on, Saturday; was feeling very miserable; was sick two days, but feel better now.

Q. Have you lost or gained flesh? A. I think I am neither.

Q. I do not care especially about your gaining, do you feel strong? A. Not extra strong.

Q. Do you feel stronger than you did? A. I think so, but the last few days my head has been swimming round. I have been compelled to rest Saturday and Sunday and Monday.

Let me hear how her heart is acting to-day. Some months ago she had an attack of vertigo, a most nervous with great constipation, due to weakness of the heart, for which we put her to bed and treated her with digitalis. That is one of the symptoms and accidents which sometimes accompany

of diabetes. The heart seems to be doing its duty pretty well to-day; but remembering what she has said as to recent weakness, I think that the best thing she can do is to go home and go to bed—stay in bed for three or four days, and then let me see her again. Mrs. McB. has likewise been complaining of constipation. Never allow diabetic patients to become constipated, because constipation is often the precursor of coma, perhaps through the production of toxæmia, even a cause of coma, and coma is the great danger that threatens these patients. You will find that sodium phosphate in drachm doses, thrice daily, is one of the best remedies to guard against constipation. The dose and frequency are to be gradually lessened. Mrs. McB. now finds that by taking a full dose only once a day the bowels are opened three or four times. We will therefore reduce the dose to half a drachm before breakfast. In hepatic cases I find this drug useful, quite apart from its laxative effect; and in cases of temporary glycosuria due to hepatic disturbance in stout persons, sodium phosphate sometimes brings about an entire disappearance of sugar from the urine. In cases presenting the characteristics of Mrs. McB.'s—cases which sometimes run on for twenty years or more—we do not aim to secure the disappearance of sugar. In fact, patients usually feel better when they are passing a little sugar; and we must look out for squalls if sugar is entirely absent. The prognosis as to life, in these cases, is very favorable, as you perhaps gather from what I have said. The prognosis as to comfort is likewise good, provided the physician is not too anxious to experiment upon the patient with new drugs. In such cases the duty of the physician is to watch the patient, guard the diet, not give too much medicine, but to carefully look out against the accidents that might occur in the course of the disease.

Original Communications.

A CONTRIBUTION TO RHINOPLASTIC SURGERY.

BY FRANK L. MOYNE HUPP, A.M., M.D.

ADDRESSING SURGEON TO THE CITY HOSPITAL, NEW YORK.

Is the traditional history of the nose there are to be found many curious and interesting facts. Herodotus, the father of profane history, tells us how the nose, in the symbolical language of the Egyptian gods, symbolized a wise and cautious man.

We have read how lightly the Greeks and Romans regarded a large and highly pointed nose. "Nasus pedestris" said many of their satirical poets, and derived their appellation, as *Ovidius* and *Sapientia* affirm.

Yours are in Oriental lands, there but no end in commencing the material for this kind of surgery, have very limited, for we are told that among the Egyptians, Greeks, and Romans, the loss of the nose was the punishment inflicted for adultery, and, as told in the language of literature, the injured husband or wife had the privilege of setting his spouse, and M. Lenoir, suggested the Yewer.

This same writer, while traveling through Egypt in 1824, passing through the village of Foha, observed a large number of people who had lost this important part of their anatomy, and, on inquiry, his guide informed him that the neighboring district had long been infested with bandits, and that it was found necessary to inflict some severe punishment upon such robbers as were seized, in order to intimidate those uncaptured.

Queen Elizabeth, who was noted among other things for her long nose, issued an edict once to the effect that all who spoke ill of her person or government should have their ears or noses cut off.

History tells us that Charles II punished one of his noblemen for some satirical observations by causing his nose to be cut from his face. Then we have the story of the Paris notary's wife who wreaked her vengeance on her husband's paramour by tearing her nose from her face.

The Brahmans seem to have been the leaders in rhinoplastic surgery. In Galen's travels in the East he saw the operation, and described it in words to this effect: The skin of the cheeks was turned forward, and, to facilitate the extension of the integument, several longitudinal incisions were made, so that the flap might be brought up, applied to the nose, and secured by sutures.

of paper is considered and use the incision toward the ears.⁸ Robert Loring, who consistently employed the ancient British method of trepanning, Oliver Morton suggested as a substitute for the last use a piece of Bookbinder's firing bowl.

Engelmann also dedicated the new museum in 1864, in grateful great awe by his skill in representing man, and added much to the literature of history on the subject. He was the first to give the cause of transportation from the skin of the same. It proved useful in the history of England, of this noted surgeon that they raised a statue to his memory, and on the third of June, 1864, at the age of 70 years.

of *Operative Surgery* we have detailed an ingenious and ludicrous variety of transplantation. A person of rank, having lost his nose, would immediately procure the services of a nose maker, called a *nasifex*, who would choose one of the disfigured man's well-nourished slaves. The donor was struck upon his breech with a slipper until the integument in that place was considerably swollen; the flap was then cut from this singularly prepared breech of the form and width sufficient to replace the lost member. It was then sutured to the face, the nostril openings having been maintained by means of small cylinders of wood.

The brilliant results following [facial anaplasty are for the most part due to the large supply of blood from the numerous vessels, their multiplied ramifications, and the

free anastomosis. How often have we seen large portions of facial integument and the scalp, detached by accident, adhering only by a very narrow isthmus, unite firmly and rapidly when aseptically replaced! While, on the other hand, in other parts of the body, endowed perhaps with a less degree of vitality, a traumatic flap nourished by a much broader isthmus may be full of gangrene in an incredibly short time.

A knowledge of these facts has led surgeons from an early period in the history of the healing art to devise operative proceedings for supplying accidental deficiencies or replacing structures removed by disease.

In nose making there are to be considered several methods.

The Indian or Tagliacozzi method, named for the inventor Tagliacozzi, is as tedious for the surgeon as it is fatiguing to the patient. The flap which is to serve as the new nose is dissected up from the arm or forearm and supported for about ten days on a clean, moist piece of lint; this step is for the purpose of causing granulations to spring up, thus inducing better adhesive power. The margins of the deformed nose are properly denuded, and the flap is shaped and adjusted.

The arm is then rendered as immobile as possible for a period of ten days or a fortnight, when the pedicle is cut across and the flap left in its new position vitalized from the new surface to which it has been attached. Graefe, of Berlin, modified the proceeding somewhat by performing

the whole operation at a single sitting, and also by the invention of a broad waistcoat surmounted by a hood for the purpose of reducing the patient's fatigue to the minimum, and for the more complete immobilization of the arm and head.

Graefe's first case of operation according to this method required almost a year to complete it, and then the nose was such a curious-looking one that the patient exhibited himself, for a lividified, to the wondering eyes of those visiting the museums. In four other cases he was entirely successful.

The details of these operations are communicated in the *Gaz. méd. de Paris*, 1835, p. 168.

Poss and Sabine used the patient's finger in the formation of the new nose, thus modifying the Tagliacotian method.

In the Indian method, sometimes called the process of Koomas, the flap is taken from the forehead. The first efforts in this operation were made in England, Germany, and France.

An imitation of the nose is made in paste-board or some other material, and this pattern is spread upon the forehead and outlined with some coloring matter; the flap is dissected up from the pericardium and transposed edge wise to its new position and held in place by means of a composition of Japanese earth or the same. As the history of the nose here with submitted mentions the details of the Indian method, they will not be repeated now.

There have been modifications of the method made by Dieffenbach, Dieffenbach, Hoffman, Volpau, and others, but they rely only in the treatment of the pedicle of the forehead flap.

Langenbeck included the pericardium in the forehead flap. Dieffenbach, and others advised the approximation of the forehead wound with sutures, but Volpau looked upon this as an unsurgical proceeding, maintaining that one of his own six patients operated upon by the Langenbeck of Paris, in 1833, two of them died, and others experienced very serious complications and phlegmonous abscesses, one being fatal, and one cured. This healthy Oldenburger can be very easily satisfied, as the surgeon has succeeded in the treatment of skin transposition.

Regarding the priority of rhinoplasty in America there seems to be some dispute. In the American edition of Volpau's *Operative Surgery*, vol. i, p. 626, the following statement is recorded: "The first successful case of the operation of rhinoplasty performed in America is stated on the authority of Dr. Reese (*loc. cit.*) to have been by Dr. John Mason Warren, of Boston, in 1837." That the foregoing statement is incorrect will appear from a communication which was printed in the *New York Medical and Surgical Reporter*, vol. i, No. 21, July 25, 1846. In this article Dr. J. P. Batchelder, of New York, describes the case of a man with almost complete destruction of the nose upon whom he performed the Indian operation in July, 1838; the result was most satisfactory. The scabbles

were removed on the fifth day, the pedicle divided on the fifteenth day; twenty two days after the operation every part of the wound was healed and the cure pronounced complete.

While reconstruction of the nose has been one of the recognized operations in surgery in this country for many years past, the results have not always been so encouraging as to lead the surgeon to recommend the operation indiscriminately.

It is rare indeed that we see, in three years, complete or even partial destruction of the nose or face from malignant disease or syphilis, for the reason that the surgeon is able to arrest the disease before any serious destructive incursions are made.

The only apology I have for publishing the following case is because the operation proved successful, very pleasant, and expeditious, improving very greatly the personal appearance of the patient:

J. R. TAYLOR, aged twenty years, was admitted June 21, and given the following history: Twelve months before I had a small white tumor on the right side of the nose, it gradually increased in size, and in 1893, when it was removed, it was found to be a cancerous growth, and was removed by the use of the cautery.

After the removal of the tumor, I had a small ulcer on the right side of the nose, and it was not until the middle of the year 1894, when it was removed, that I was cured.

After the removal of the tumor, I had a small ulcer on the right side of the nose, and it was not until the middle of the year 1894, when it was removed, that I was cured.

"cancer doctor." Here he subjected himself to the tortures of a burning process. This removed the ulcerative area and carried part of the nose with it, exposing the mucous membrane covering the turbinated bones and the septum, and by looking antero-posteriorly the naso-pharynx could be distinctly seen.

The Indian operation was proposed and accepted.

Operation.—May 25, 1892, ether narcosis. The details of asepticism carried out; head and beard shaved. Cicatrix completely excised, and the tissue immediately adjacent denuded for a short distance.

An incision was carried upward in the direction of the septum as far as the inner extremity of the left eyebrow. A second incision was made along the outer border of the right nasal bone upward, close to the inner canthus of the eye, extending about half an inch beyond this point.

The intervening integument was dissected up from the periosteum and turned aside for use later in the operation.

An exact pattern of the deformity and the denuded area was cut from a piece of aseptic oiled silk and placed on the forehead, extending upward from the left eyebrow.

An incision was now made along the circumference of the pattern, carrying the knife down to the pericranium.

In the cutting, provision was made for a little triangular tongue at the right superior corner, so that the transposed flap might fit perfectly to the left apex nasi, and to the anterior part of the septum, both having been destroyed.

The incision was carried in a curved direction through the hairy part of the scalp, thence downward on the pattern's left side, to a point without the supra-orbital notch. The object of this step was to gain the vascular support of the supra-orbital branch of the ophthalmic artery.

The flap was dissected up and transposed edgewise, carefully adjusted to the denuded surface prepared for it, and held in place by very fine iron-dyed silk sutures. The new ala was supported by an iodoform-gauze plug. Dieffenbach* observed in some experiments he performed upon rabbits that the chances for union after the transposition of a portion of the integuments were always greater when the flap was not adjusted for several minutes after it had been excised, claiming that the secretion of blood must be arrested before the secretion of the coagulable or plastic lymph commences. With this in mind the flap was held between the layers of an aseptic compress until all oozing ceased. Hemorrhage from the flap was arrested by compression.

The nasal tape which had covered the nasal bone and had been dissected up and placed to one side was now utilized in covering the lower fourth of the forehead wound.

An aseptic compress of gauze was applied covering the head and forehead for the moment.

Subsequent Progress of the Case. Sutures were removed on the third day. The patient was kept perfectly aseptic, the supra-orbital artery could be felt pulsating through the flap. Inflammation of the flap did not arise, and on the twelfth day after the operation the patient presented a face as restored as the lower third of the nose. And almost devoted to the culture of the nose, the patient had recovered to the hospital.

Remarks.—The following should be borne in mind: a second incision, parallel to the first, was made in the supra-orbital artery, thus securing its support. The flap was held in place by very fine iron-dyed silk sutures. The patient was kept perfectly aseptic. The patient was kept perfectly aseptic.

One day after the last operation I received the following letter from the patient, giving the result of the operation:

with a strength varying from ten to fifteen cells. The instrument used for piercing the follicular walls was a hair-like flexible steel broach.

Recently a right nostril was made for the patient, the opening left after the first operation having contracted so much that breathing through this nostril was very imperfect. I regret that this very satisfactory opening does not appear in the photo-engraving.

The redundancy of tissue between the eyes caused by the original twisting of the pedicle has now almost entirely disappeared by absorption.

I have not deemed it expedient or safe to incise a wedge from the root of the flap, as is sometimes advised, because the vitality of the new nose has in a number of instances been seriously compromised by this unnecessary step.

The success of the Indian operation depends upon the preservation of the flap's vitality; mortification may arise from five different causes:

1. Compression of the vessels by twisting the pedicle too firmly.

2. The congestive asphyxia of Phillips.* This writer maintains that the blood which is conveyed to the flap by the arteries should, as far as possible, be returned, otherwise there may be this condition of asphyxia.

3. Septic infection.

4. Insufficient nutrition from the failure to include the supra-orbital branch of the ophthalmic artery.

5. Compression of the pedicle from the applied dressing.

55 FOURTEENTH STREET.

THE VAGINAL ANUS AND ITS TREATMENT,

AS ILLUSTRATED BY THE REPORT OF A CASE,

AND A SUGGESTION FOR
A METHOD OF FORMING AN ARTIFICIAL SPHINCTER.

BY A. H. BUCKMASTER, M.D.

In the following pages I have condensed the observations and cases (many of which were sadly incomplete) bearing on this subject, and I have also formulated a method of operating which I hope will diminish the number of failures in the future. A preliminary report of the case which is cited was read before the New York Obstetrical Society in May, 1892.

I have chosen the term *vaginal anus* to designate cases in which the rectum empties its contents through the vagina, and which have no opening at the usual position on the skin. The term is open to criticism because when in fetal life the partition between the rectum and the urogenital sinus fails to form, we have both passages opening into a clonca. However, it expresses practically the conditions with which we have to deal, and it is certainly far less cumbersome than the strange appellation *atresia ani vaginalis*.

In 1887, a little girl, seven years of age, was brought to me by her parents in order to ascertain if anything could

* *Med. Rec.*, July, 1890.

I read before the American Gynecological Society at its nineteenth annual meeting.

be done to relieve her of the disgusting condition which is alluded to in the title of this paper. Having placed the patient under chloroform, the vulva was seen to be very red and excoriated, and there was no sign of a rectal opening in its usual position. Fæces were seen to pass from the vagina, and I was able to introduce a probe into a narrow opening in the upper and back part of that passage. The parents informed me that the condition had been recognized at birth and that some operation was done to relieve it. They did not know its nature, but they were instructed to keep an oiled rag "in an opening" made by the operator through the skin. No sign of this operation could be found. The mother said that the patient had no control over the bowel, and that the soreness about the parts, in spite of the greatest cleanliness, made the little one's life miserable. Before advising the parents as to what was best to be done, I carefully read the cases that had been recorded. The search was far from satisfactory, and I could find very few cases which entirely conformed to the requirements of a cure. To cure a case it is necessary to form a rectal canal separate from the vagina which will remain open, and over which the patient must have a slight control. In the light of the experience obtained by Emmet in his unsuccessful efforts to form a permanent vagina, and also in the light of his success in making a urethra, it was not difficult to see where the plans of the recorded operators had been defective; and, in view of the difficulties that might still be met with, I did not feel justified in promising success. I advised an operation because there was absolutely no control, and matters could not be made worse, aside from a fatal result from the operation. This I did not fear. Moreover, the let-alone treatment was not without danger. It was the custom of the parents to administer pægorie to the patient in order to restrict the number of movements, and she was accustomed to remain constipated for six or seven days. At the end of this time she became moribund and showed the effect of fecal absorption, and then a cathartic was used. Such a plan will result in time in distention and atony of the bowels, and this condition may assume dangerous proportions. Not wishing to run the risk of a failure to secure control over the rectum, the parents of my patient returned to the country, and I heard no more of them until 1892, when they again came to me and stated that the little girl suffered so much that they were prepared to take any risk if there was a fair hope of a successful issue. Having given the matter a great deal of thought, I was prepared to proceed; but, before I began, I told the parents that four or five years might pass before there would be much chance of successful success.

The general plan was to make a triangular cut including the points of the triangle using the sharp-pointed scalpel, the spot where the incision is to be made, which is indicated by the dotted line, being at the upper part of the *fourchette*, and the skin near the *fourchette* in front. The next step was to draw down the rectum to the skin. This was effected by a trap outlet for the feces, and as all diseased portions of skin could be omitted by a method which will be explained in another place, the patient could entirely

recover from the irritation of the passage of the fæces through the vagina, which in her case was excessive. She would then be ready for the next step, which would consist in building that portion of the pelvic floor which is some-



FIG. 1. Proposed incision for the first operation.

times called the perineal body. This being accomplished, yet another and final operation would be the attempt to pierce the levator ani muscle, and, by forming an artificial sphincter, to secure control of the bowel. In the spring of 1892 I performed the first step of this operation and obtained the result shown in Fig. 2. The patient was entirely relieved of the irritation. On the second day after the operation I found that I had made the mistake which one



FIG. 2. Showing result of operation. A different method was previously employed, the rectum was removed, and the rectum was replaced in its normal position.

it almost seems to make the first incision unnecessary, as it is disrupted. I had too much tension on the rectum, and there was a tendency for the stitches to cut out. This is now

ous mistake in any plastic work and will always result in scar tissue—the mark of slovenly surgery. How this mishap can be avoided is shown in Fig. 3.

In 1893 the patient came for the second step in the operation, which is the restoration of that part of the pelvic floor which is bounded by the rectum, vagina, and perineum. This was accomplished successfully, so that the patient now has an excellent posterior vaginal wall. Since publishing the preliminary report of the case in 1892, I noted a suggestion from Dr. Willems which I believe to be of the greatest importance. His plan is to prevent the fecal incontinence which so frequently occurs after removal of a portion of the rectum for malignant disease. The good results of simple separation of the fibers of the rectus muscle in gastrostomy led him to believe that a similar advantage might be gained by fixing the cut edges of the remaining portion of the rectum to a slit made in the gluteus maximus muscle by forcible separation of its fibers. I have determined to put this procedure in practice in my case, using the fibers of the levator ani in place of the gluteus maximus. In order to do this, it was advisable to carry the incision nearer the coccyx, and this was done six weeks ago; but, the bowels not having been thoroughly emptied, I determined to defer the piercing of the levator ani until another occasion. The operation was an absolute success so far as it went, and I had hoped to complete the remainder of the operation in time to present a case of completed operation before the American Gynecological Society, but the patient could not submit to the last procedure until a later period.

curialis. The patient was a lewess, who attained the age of a hundred years. Mercenians advised strongly against operation, and no attempt was made to correct the deformity. (*De sedibus et causis morborum*, epist. 32, art. 3, Venetii, 1761, 2 tome, fol.)

CASE IV.—De Jussieu mentions a patient seven years of age. There is no account of an operation. (*Histoire de l'Académie des sciences*, année 1719, p. 42.)

CASE V.—Hesbart says he saw a young woman, twenty years of age, who had always enjoyed excellent health. No operation was performed. (*Miscellanea curiosa sive ephemer. Acad. Natur. Curiosior*, decur. ii, ann. x, observ. 75, p. 132, 1691.)

CASE VI.—Dodoneus. Case of a child. (*Annolud. ad Boerhaavium*, cap. iv.)

CASE VII.—Anatus Lusitanus records the case of an infant. (*Curationum medicinalium*, cent. ii, curat. x, Venet., 1653.)

CASE VIII.—Schonck reports the case of a child. (*Opus citatum*, lib. iii, sect. 1, obs. 258, p. 458.)

CASE IX.—Petersen records the case of a child. (*Observationes medicæ*, dec., obs. 2, Lipsiæ, 1707.)

CASE X.—Hartman records the case of a child. (*Opus citatum*, Hæbart., ann. 1691, p. 279.)

CASE XI.—Alix. Child. (*Observationes chirurgicæ*, tome iii, p. 203, Altenburg, 1774.)

CASE XII.—Papendorf observed a child whose rectum communicated with the vagina by two abnormal orifices. (*Abhandlung von der angeborenen Verschliessung des Aftern bey Kindern*, Leipzig, 1783.)

CASE XIII.—Wandermonde. Child. (*Recueil périodique de la Société de médecine de Paris*, tome vi, p. 128.)

CASE XIV.—Arand. Child. (*Observat. med. chirg.*, obs. iv, p. 28.)

CASE XV.—Fürst. Child. (*Opus citatum*, Hæbart., ann. iii, obs. 112.)

CASE XVI.—Bonn. Child. (*Papendorf. Opus citatum*.)

CASE XVII.—Kirsten. Child. (*Act. nat. cur.*, lib. ix, obs. xi, p. 24.)

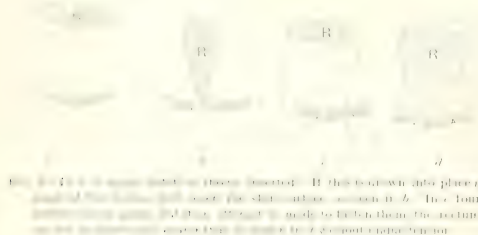
CASE XVIII.—Rochard. Child. (*Journal de médecine, chirurgie, pharmacie*, tome lxxxv, p. 370.)

CASE XIX.—M. Fournier relates the case of a woman who had been in labor five days. On making an examination, it was found that the rectum did not open in its normal position. There was a large opening from the vagina through which the rectum had to be emptied of feces before the labor could be terminated. (*Dictionnaire des sciences médicales*, tome iv, pp. 155, 156.)

CASE XX.—Mr. Cook discovered the deformity in a woman, forty years of age, while in labor. The opening was sufficiently large to admit two fingers. (*English Translations of Morgagni*, vol. ii, p. 110, Boston, 1824.)

CASE XXI.—Mr. Cook found an infant who had an anus in the natural situation, but the opening was so small that a fine probe could scarcely be introduced. (*Opus citatum*, vol. ii, p. 110, Boston, 1824.)

CASE XXII.—Mr. Howship was requested by Dr. Samuel Merriam to make an autopsy on the body of a young woman, aged seventeen, who had died of a scrofulous disease. There was an external mark of an anus but no opening. There had been no want of power of retention. "Upon opening the abdomen the rectum was traced down to the posterior part of the vagina, to which it was adherent. The vagina being removed and laid open, the intestine was found to open upon its surface by a very vascular sort of papilla, situated within the vagina, near the os externum." (*Pract. Observ. in Surg. and Anat.*, p. 321, London, 1816.)



Having recently described the operation I performed, and about to proceed to do so again, I shall now recount the unaltered history of fifty-one cases, and then consider at length the indications and contra-indications for the operative procedure as well as the operation, which are indicated.

CASE I.—Illustration records the case of a young girl who had a large, fleshy, and very painful tumor at the rectum, which she had been suffering from for several years. The tumor was so large that it prevented her from sitting or standing, and she was unable to walk. The tumor was removed by the operation, and she was cured.

CASE II.—Van Rensselaer records the case of a young woman who had a large, fleshy, and very painful tumor at the rectum, which she had been suffering from for several years. The tumor was so large that it prevented her from sitting or standing, and she was unable to walk. The tumor was removed by the operation, and she was cured.

CASE III.—Morgagni records the case of a young woman who had a large, fleshy, and very painful tumor at the rectum, which she had been suffering from for several years. The tumor was so large that it prevented her from sitting or standing, and she was unable to walk. The tumor was removed by the operation, and she was cured.

CASE XXIII.—Dr. J. Rhea Barton reports the case of a infant six months old. There was no trace of an anus, and the feces was passed at the vagina simultaneously with the gas, and the mother complained of the child's constant pain. An opening was made through the skin into the rectum and lint with sweet oil used as a plug to keep the artificial anus open. The mother did not persevere with the lint and the wound closed. As the age of nine months the child continued to trouble on account of the feces becoming more consistent, so she would at times go a dangerous time without a movement. She usually went four or five days and always had recourse to an aperient. "In taking the case into further consideration, the following method of operating suggested itself to me as one promising success: To take for my guide into the rectum the opening communicating with the vagina; to introduce into it a director and with a bistoury to lay open the vagina and integuments as far back as where the anus should be; there to remove a small portion of the integuments, if necessary, and to dissect down until I came to the termination of the gut and to open it freely. By this operation the anterior boundary of the incision would be the fistulous opening in the vagina, and posteriorly it would terminate where the natural outlet ought to be found. The subsequent treatment to consist in endeavoring to promote granulations and the cicatrizing of the original opening, and so much of the anterior portion of the incision as rendered the vagina incomplete; in the mean time to keep the remainder open until this shall have been effected. This plan was pursued, and I had the pleasure to succeed most perfectly in all my views. The integuments around the incision retracted, thereby obviating the necessity of removing them. The original aperture closed up with that part of the incision connected with it. The vagina was complete, and a route direct from the rectum was established having no connection whatever with the vagina. Under a belief, therefore, that this part of the structure, from continued use, would in time assume the functions of a proper sphincter, I operated with confidence of success, and was not disappointed. The little patient never found any difficulty from that source." (*Medical Recorder*, vol. vii, p. 357, Philadelphia, 1824.)

I quote this case at length because it is the first that shows an intelligent attempt to correct the deformity. The result achieved was far better than the operation deserved, but I have no doubt that in due time the passage closed up again.

CASE XXIV.—Dr. Samuel reports the case, which came next in order to Dr. Barton. The point where the anus should have been was not indicated by a depression in the skin. The feces were passed through a small opening situated about half an inch from the os externum. The child passed feces with considerable pain, as indicated on the day of the second and third weeks after its birth. Dr. Barton introduced a probe through the abdominal cavity, under the skin, and then, on turning the point of the probe, nothing was seen from the outside of the abdomen, the probe pulled out from the rectum usually found. The course of the probe was that in the upper part of the day of the operation, and the child continued to pass feces, but not opening, and there it has been since. It would have been entirely reasonable to suppose a rupture of the gut.

The same notes that Dr. Barton operated on the next month at Dr. Barton. When he operated he found there was found a fissure of large size, which had to be removed by means of the handle of a scalpel. At the time of the change from the vaginal three weeks and four days after the

operation, the second time he operated, the child was again in a dangerous condition. No opening was made, but the finger, lubricated with simple cerate, was introduced every day or two, in order to do away with any tendency which the opening might have to heal. (*Medical Recorder*, vol. vii, p. 359, Philadelphia, 1824.)

The report of such a case as this, the last record of which is only three or four weeks before the paper was written, is of no service in determining the lasting merits of the operation, and I venture to say that the child died within a few years at best if no further operation was done. In fact, I think she was in a much worse position after this operation than before it was done, and the same criticism applies to the case of Barton.

CASE XXV.—Dieffenbach reports the case of a child three months old with no trace of an anus externally. He performed the two following operations: He introduced a considerably curved director through the vagina into the recto-vaginal orifice, thrust a pointed bistoury immediately below the fossa navicularis, outside of the vagina, into the groove of the director, and divided all the cellular and muscular tissue between the point of departure and the coccyx. He then dissected off the end of the rectum from the abnormal opening and isolated it for some distance from surrounding parts, which enabled him to draw down the free edge of the bowel and attach it to the cleft edge of the perineum. The cut edges of the rectum united to the skin, and the recto-vaginal aperture closed very completely after having been occasionally touched with nitrate of silver. Three weeks after the first operation, and after the complete union of all the wounded parts had taken place, he attempted the formation of an artificial perineum. He commenced by finishing the separation of the superior wall of the rectum from the vagina with a bistoury. This portion of the rectum, thus set free in the center, contracted considerably and recoiled about half an inch. The deep-seated soft parts were brought together by a needle stitch, while the edges of the wound were united by two short harelip pins and the twisted suture. The operation was completely successful. This report marked an important advance. (Ueber die Verschlussung des After, in *Hecker's literarischen Annalen*, January, 1826.)

CASE XXVI.—Dr. Ashbell Smith, of Salisbury, N. C., reports the following case: Infant, four months of age, who had a small opening in the rectum, which was situated about an inch from the posterior and upper portion of the vagina. I

made an incision along the direction of the coccyx until I arrived at the rectum. The depth of this incision was from nine to twelve lines. The rectum was thus opened to the extent of

about an inch. The child was discharged through the incision. A transverse incision was made, and a tent smeared with sweet oil was placed in the wound to keep it open. No untoward symptom succeeded the operation, and the child was discharged in good health. About seven months after the operation (February, 1835) I saw the child again. It continued to grow perfectly healthy, and passed feces as usual. Since this method of cure is a permanent one, it has been followed by the most skillful surgeons, and the difficulty of operating was greatly relieved. The time has long been long since passed, and the operation almost as difficult to perform as before. The patient was discharged healthy and perfectly recovered. The wound was continued until the child was discharged. "It was intended to insert a probe

oil and the faeces all passed through the tube. The irritation of the foreign body soon subsided, the tenesmus disappeared, and in two months the opening through the recto-vaginal septum was closed.

The tube was now left out several hours every day, so that any sphincter that might exist should be called into action. In a short time a natural contraction seemed to take place; the edges of the wound became callous and cicatrized, and in four months the child was perfectly well, presenting such an appearance that no person ignorant of the case could, upon the most minute examination, discover that any malformation had ever existed. (*Lancet*, 1826, vol. iii, p. 112.)

CASE XXXVII.—Mr. Bryant operated upon an infant four months old. The stools had been small and scanty, and the site of the anus was marked by a slight elevation. A curved instrument, having a button-shaped extremity, was passed through the fistula and made to pass down the bowel so as to push forward at the small elevation just mentioned. Mr. Bryant then carefully dissected down to the bowel and, having incised it, stitched its cut edges to the margins of the perineal wound.

On the evening of the day following the operation a motion was passed through the anal opening. On the next day a dose of castor oil was required. The child continued to take the breast well, but was restless at night. She was discharged on the tenth day. Three months later the following note was taken: The artificial anus keeps open, being daily dilated by the insertion of a son-stange to point. At times small pieces pass per antrum and the bulk comes through the artificial anus. (*Lancet*, June 3, 1871, p. 145.)

CASE XXXVIII.—In consultation with Dr. Oliver Ross and Mr. Spencer Wells, Dr. T. B. Curtis saw a patient, twenty-four years of age, who had a recto-vaginal fistula. The anus had not contracted at birth, but the opening into the vagina contracted. The barrier formed by the perineum was divided, when it was discovered that there was a double vagina and a blind uterus. The rectum opened only into the right division of the vagina. The operation failed from the passage of a mass of hardened feces. (See *Illustrations of Diseases of the Rectum*, 4th edition, Lindsay & Blakiston, Philadelphia, 1876.)

CASE XXXIX.—Dr. Ross was called to see a child in consultation with Dr. H. H. Campbell and Dr. J. H. Smith. The child had the faeces passed by a very narrow opening from the rectum into the vagina. Insertion made on a curved director in the rectum. The recto-vaginal septum was cut down into the wound, and the child recovered without further trouble. (See *Illustrations of Diseases of the Rectum*, 4th edition, Lindsay & Blakiston, Philadelphia, 1876.)

CASE XL.—Ross operated on the following case, reported by Oliver Ross. An infant, six months of age, was born with a double vagina and a blind uterus. The rectum opened only into the right division of the vagina. The operation failed from the passage of a mass of hardened feces. (See *Illustrations of Diseases of the Rectum*, 4th edition, Lindsay & Blakiston, Philadelphia, 1876.)

CASE XLI.—Curtis saw a child, six months of age, who had a recto-vaginal fistula. The anus had not contracted at birth, but the opening into the vagina contracted. The barrier formed by the perineum was divided, when it was discovered that there was a double vagina and a blind uterus. The rectum opened only into the right division of the vagina. The operation failed from the passage of a mass of hardened feces. (See *Illustrations of Diseases of the Rectum*, 4th edition, Lindsay & Blakiston, Philadelphia, 1876.)

Diseases of the Rectum, p. 211, Lindsay & Blakiston, Philadelphia, 1876.)

CASE XLII.—Curling speaks of the examination of a child, aged four years, who died a month after the operation for an artificial anus. A very dilated and hypertrophied rectum fully proved to him that an impediment had existed during life. (*Opus citatum*, p. 211.)

CASE XLIII.—Aveling has reported a very interesting case of this malformation in which, after a series of operations, a very brilliant result was obtained. The malformation remained undetected until the child was five weeks old, when Sir Prescott Hewitt operated by making an opening at the natural situation, and attempted to close the vulvar orifice by caustic, without success. At the age of seventeen she came under the care of Dr. Aveling, and he endeavored to close the vulvar anus by plastic operations. In the first instance this object was defeated by a mass of hard feces, which tore away the sutures. A second operation of similar nature proved more successful, the opening being reduced to the size of a goose quill. A third operation was performed, a small cylindrical speculum being introduced in the artificial anus to insure the exit of flatus by this route, and so to keep the wound at absolute rest. The result of the operation was completely successful in shutting off the intestinal tube from the vulva. As hardened feces still accumulated in the diverticulum, which existed in front of the artificial anus and as this portion of the gut was unable to evacuate its contents, a still further operation became necessary for its obliteration. (*Lancet*, Dec. 29, 1884, p. 1885.)

CASE XLIV.—Howard Pinckney. Patient, eight months of age, was a small, thin child. Mother stated that the child had never had a free discharge from the bowels, and it is only by great effort that a stool, formed in the perineum, could be forced through the vagina. There was no evidence of anything that resembled an anus. The skin between the ischiatic tuberosities, vagina, and coccyx was distended and smooth, with the exception of a raised ridge or raphé extending from the fourchette to the coccyx. A communication was discovered between the vagina and rectum. It was very small—only sufficiently large to admit the large-sized probe. Assisted by Dr. R. F. Weir, he passed a probe into the rectum, and it could readily be felt through the perineum. Incision made. Rectum partly clogged with impacted feces. These were removed, and the rectum expelled a large quantity of fecal matter. The bowel was washed out and stitched to the margin of the skin with silver sutures. The next day the sutures had torn out, and the rectum retracted into the wound. He made no attempt to apply other sutures, but merely removed those present, and kept the opening dilated by means of a large probe, passing feces, with the occasional aid of a bougie, almost daily for two weeks. At the time the wound had nearly healed and was freed by warmth and dilating readily, and the operation was fully successful. In small a No. 10 rectal probe. From the wound to be a tolerably well formed sphincter developed, which kept the external opening closed, and would grasp the finger when introduced. No attempt was made to close the recto-vaginal fistula. (*Medical Record*, 1884, p. 1885.)

CASE XLV.—J. H. Smith. Case of a child, six months of age, who had a recto-vaginal fistula. The anus had not contracted at birth, but the opening into the vagina contracted. The barrier formed by the perineum was divided, when it was discovered that there was a double vagina and a blind uterus. The rectum opened only into the right division of the vagina. The operation failed from the passage of a mass of hardened feces. (See *Illustrations of Diseases of the Rectum*, 4th edition, Lindsay & Blakiston, Philadelphia, 1876.)

aining by dilatation the patency of the opening. The child died three days later from capillary bronchitis. (*American Journal of Obstetrics*, vol. iv, p. 676.)

CASE XLVI.—Osterlob. The patient was ten weeks old. The anus was situated between the frenulum and hymen. The operation was done after the method of Dieffenbach. (*Archiv für Gyn.*, Bd. viii, p. 565.)

CASE XLVII.—Frimmel. The age of the patient was twenty-one years. There was no perinæum. The anus was situated at the posterior commissure. Two fingers could pass into the anus. There was incontinence of feces. Operation after Lawson Tait. Sânger flap-splitting method. (*Munch. med. Woch.*, 1890, No. 38.)

CASE XLVIII.—L. Pincus. The patient was seven years of age. She had control over the bowel except when the movements were loose. There were two communications with the vagina—one above the hymen and the other, surrounded by muscular tissue, was situated below this membrane. There was a small depression at the usual situation of the anus longer anteriorly than posteriorly. Gradual dilatation of the sphincter vaginae was practiced, and an attempt was made to close the other opening by the use of nitrate of silver. (*Samm. klin. Fort.*, N. folge No. 80.)

CASE XLIX.—Himmelfard. Patient was fourteen years of age. The anus was situated between the frenulum and hymen, and there was a good sphincter. No mention of condition at site of natural anus. No treatment, as patient had complete control. (*Arch. für Gyn.*, B. 5, 42, Heft 2, p. 372.)

CASE L.—Dr. Kled Abel. The patient was twenty years of age. The anus was situated near the frenulum. Had movements of the bowels every eight days and then there was a sudden evacuation of contents. No treatment. No mention of appearances at usual site of anus. (*Arch. für Gyn.*, B. 38, Heft 3, p. 493.)

CASE LI.—Koffer. No more accurate description than left-sided colotomy after trying to find the end of the rectum by resecting the coccyx. The patient was a newly-born infant.

Condensing the histories of these cases was a tiresome task, but I gratefully express my indebtedness for the admirable work of Bodenhamer, from whom I have freely drawn for the early histories.

In studying this list of cases, which comprises most of those on record, the investigator is surprised to find it so small. That the malformation is a very rare one is proved by the fact that out of sixteen thousand cases of obstetrics occurring under Collins at the Rotunda Hospital, only one case of natural anus was noted. Bodenhamer, in the case of a female, reported thirteen, thirteen and fifty-four girls in his foundling asylum, and Wiedel, in a case of a female, reported one among the twelve thousand children who were under his care while resident at the Rotunda Hospital. The small size of the number of reported cases is small when you are presented with a case of this kind. It is a question of the relief of the patient, and it is a question of whether or not the relief will be permanent. I

am sure that the relief of the patient is a very important one, and I do not refer to the immediate relief of the patient, but to the permanent relief of the patient. I do not refer to the immediate relief of the patient, but to the permanent relief of the patient.

an important matter, but to results which must follow from trying to keep a canal whose walls are composed of scar tissue from closing up.

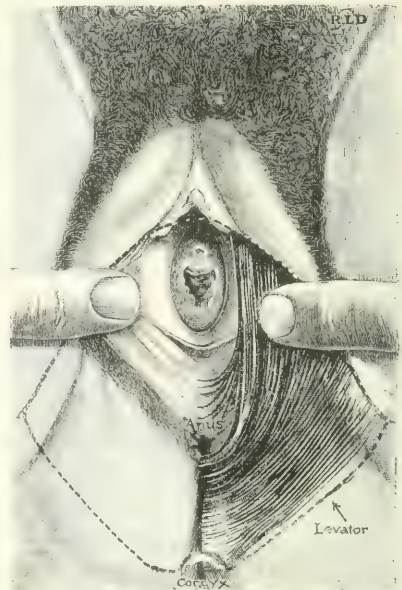


FIG. 4.—The levator is represented diagrammatically. It is, of course, much farther from the skin than it appears in this illustration. The point immediately below the anus is where the muscle should be pierced, and the rectum drawn through and sewed to the sides to form an artificial sphincter. [R. L. Dickinson.]

INDICATIONS FOR THE OPERATION.—There are so few cured cases that it is easy to explain the attitude of conservative men toward operative procedure. It is important to classify the cases so that we may determine which are fit for operation. It is convenient to divide the cases into two

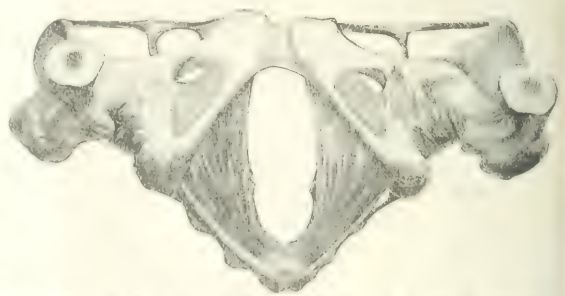


FIG. 5.—The rectum is shown passing through the levator ani muscle with the artificial sphincter. [R. L. Dickinson.]

classes. The first class comprises those patients who have control, and the second class includes those patients who pass their feces involuntarily. The first class is not large in number, and if the patient will take precautions to pre-

serve cleanliness, and if the opening is large enough to pass formed feces, I would not advise operating. A douche after each movement will in some cases prove sufficient to keep the patient comfortable. If such precautions are neglected, the mucous membrane of the vagina will become excoriated and abscesses may form in the connective tissue. If, in spite of this advice, the patient should still desire an operation, I think the results are sufficiently good and the dangers under sufficient control to warrant us in complying with her request.

The second class, or those who have no control, includes the great number of cases. Most of them are recognized shortly after birth, and unless the opening is so small that it obstructs the passage of feces, nothing need be done until a later time. Fecal matter in healthy young infants is quite unirritating, but as the character of their food changes it may cause great trouble, as it did in my case. For this reason careful attention should be given to the diet. It is easier to mold the tissues after the child is fifteen years of age than before this time, but it is not necessary to wait on this account.

THE DANGERS OF THE OPERATION.—In considering the dangers of the operation we must not forget that all of the fatal cases occurred in a day before aseptic surgery was understood. The operation which I am about to describe is not more dangerous than that used to restore a ruptured sphincter. It is used particularly in those cases where there is no control. In cases where the patient has control and it is necessary to free the bowel for some distance there is more risk. A number of deaths have been recorded, but with the better technique of to-day the risk is no longer great if the patient is healthy.

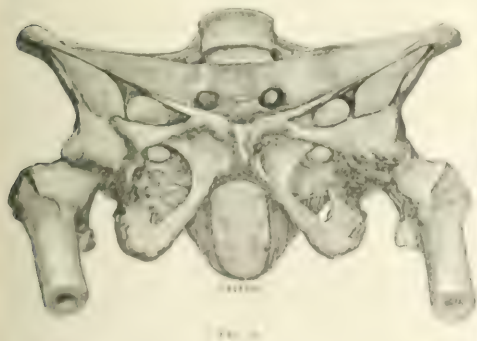


FIG. 2.

THE OPERATION.—It is stated that M. VALLÉ, a French surgeon, the inventor of the procedure, had a large number of cases treated with a cure of 91.1 per cent. success. It is worth while to study the method of the surgeon, and Dr. Buckmaster, of Montreal, has put this idea to practice. The operation is performed in all the suggestions but under some very modifications. Perhaps the most important was to do the operation and work in the rectum, and in

freed the rectum and drew it down to the skin. This had been done by Amussat in 1835 after operating on a case of imperforate anus and rectum, and is an essential step to the formation of a permanent canal. While almost every operator has introduced some variation in method, and a

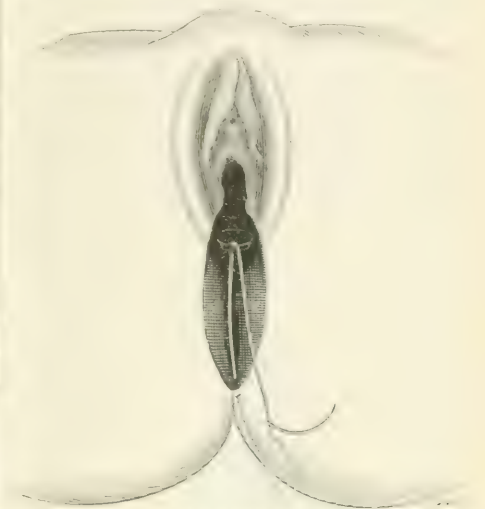


FIG. 2.—The rectum is to be drawn to the skin by a suture.

mass of suggestions have been recorded, I shall confine my description to that operation which seems theoretically, and has proved practically, to be the best.

First Step.—After introducing a probe into the fistula from the vagina, and bringing out the point of this instrument just above the levator ani muscle, the tissue above the probe is divided. All previous descriptions of operations indicate that the point where the skin is to be pierced should be the natural site of the anus, or that it should be at a point near the coccyx. Nature, however, indicates the exact position, and this is in front of the lower part of the sling formed by the fibers of the levator ani muscle. (See Figs. 4, 5, 6, and 7.) The location of this muscle should be ascertained, if possible, before the patient is etherized. When the tissues above the pubic bone have been divided the incision shown in Fig. 8 is passed. The rectum is now divided and can be slightly freed by a few strokes of the probe. First, in the description of this operation is like that usually given except that we have pointed out an additional guide in marking the incision on the back of the incision. At least, as recommended, however, that this incision will liberate the levator ani and let the probe be withdrawn (as in Fig. 9) and that we shall draw out the rectum back.

The next thing to be demonstrated is to draw the rectum to the skin and then to draw up the rectum. The rectum should be drawn to the skin without undue pressure. Wood has stated that "the rectum should be drawn out and not through." It is not, but it is not, but it is proper to draw out the rectum back and forth and not

great, the sutures will never cut out but will become imbedded in the tissue, as is the case in all plastic work. On the second day after I first operated I found that the strain had been too much for my stitches, and I was obliged to cut those at the sides and place a new one in the middle of the wound. This entirely removed undue tension. If the tension had then been too great I would have drawn the rectum down as far as possible without strain, trusting to a future operation to reach the skin. By careful attention to this caution we can never fail to gain something, and it is only a question of time when the rectum can be securely anchored to the skin. It is important to bear in mind that if union of the rectum to any point of the skin is secured, no matter to how slight an extent, it is not a difficult matter to bring the remainder of the circumference of the bowels in the desired position at

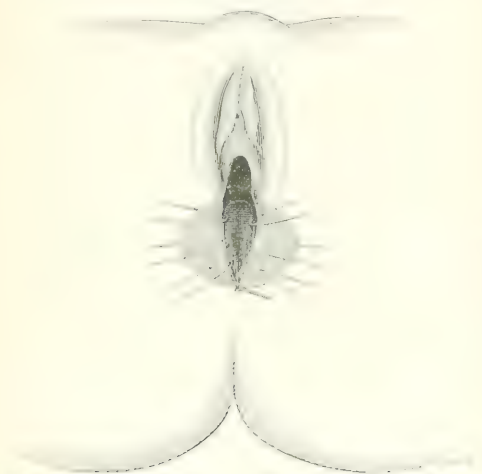


FIG. 8.—The rectum after the first operation. Illustration is first and lateral view. The rectum is shown in the center, and the sutures are shown passing through it and the surrounding tissue.

a later period. The figures below will give an idea of the importance of not attempting to attach too much of the rectum at once.

Having sutured the rectum to the skin, the raw surfaces left at the side are sewed together with stitches passed in the manner indicated in Fig. 8. Fig. 9 shows the first step of the operation complete. The rectum opens below the vagina, and no raw surfaces have been left. The patient can leave her bed in three days.

Second step.—The second step of the operation consists in forming that part of the pelvic floor which is usually known as the perineal body. It will make very much as it does in the normal state, and the distance between the vagina, rectum, and the anal opening. It can now be properly described by stating that it is a good quality of tissue.

Third step.—The third step consists in the removal of the rectum and the opening of the rectum to the outside. The rectum is shown in the center, and the opening is shown at the bottom of the illustration.

anal muscle, as has been done with the rectus muscle in gastrectomy. If this is practicable, we ought to obtain a fairly good sphincter. It is not unlikely that those cases

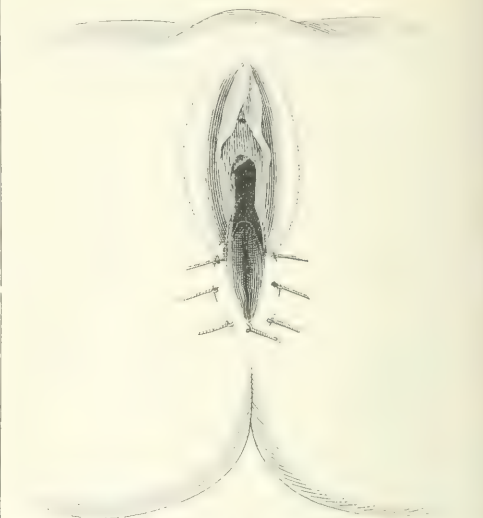


FIG. 9.—This shows the completion of the first operation. All raw surfaces have been united.

which have gained control after operation have done so by having the muscle, which has been divided, grow about the rectum.

ACTINOMYCOSIS OF THE LIVER.

By WILLIAM MOSER, M. D.,

PATHOLOGIST TO ST. CATHERINE'S HOSPITAL, BROOKLYN.

EVER since Langenbeck, and especially Bollinger, Israel, Ponfick, John, Hahn, Harz, and others drew attention to the ray fungus in man and animals much valuable literature has been added to this subject. Although the exact botanical position of the fungus is not yet determined (according to Boström, it ought to belong to the class of *Cladotricha*), there can be no question as to its pathological significance. Its place of predilection is the lower jaw, gaining entrance through some decayed tooth, producing tumors, multiple abscesses, and fistulae. In this region it may be confounded with sarcoma. The infection takes place probably through neuremisement and possibly by inhalation. Actinomycosis of the jaw may produce metastatic abscesses and other changes in the internal organs which scarcely prove fatal. According to von Jaksch and Roser, the condition of the throat known as angina ludovici may in some instances be dependent upon the ray fungus. At any rate, the infection may not be limited to examine these cases under the microscope, a little more clearly. Some cases of so-called peripneumonia or empyema, as well as cases of broncho-pneumonia and abscesses, forms of intestinal mycosis, are really cases of actinomycosis (Charrin). In fact, its

pathological manifestations in the various internal organs are very apt to be misleading, unless a careful microscopical examination is made of the pus and tissues. Multiple abscesses may develop in the various organs, as well as parenchymatous changes, the picture reminding one of some cases of pyemia. In an autopsy recently occurring at St. Catherine's Hospital the liver was principally involved, and it is to these changes that I wish especially to refer. There was no affection of the jaw in this case, it being difficult to determine where the primary infection took place. There was broncho-pneumonia of the right lower lobe, with fibrinous deposits on the pleura and subdiaphragmatic abscess and parenchymatous nephritis. A few abscesses could be seen in the spleen. The liver was studded with innumerable miliary abscesses. A few large abscesses could be seen here and there. They had a resemblance to tubercle nodules, from which puriform or cheesy material could be pressed, containing minute yellowish granules. Fistulous tracts had been formed in different parts of the organ. The secondary inflammation produced by the invasion of the fungus was that of the hobnailed or cirrhotic liver. The parenchyma was almost destroyed. Under the microscope the picture is as varied as the gross pathological manifestations, the only characteristic being the fully developed ray—i. e., filaments radiating from a common center, giving an appearance which has been compared to the "sunflower or aster." The club-shaped extremities of these filaments or mycelia are seen in a variety of leptothrix, hence they are not characteristic of the *Actinomyces foeta*. In one specimen I could see what I regarded as the primitive stage of the ray or "aster," the appearance much resembling that of the common starfish (*Asterias rubens*). The pus when examined fresh would at times show comparatively small numbers of mycelia, threads, and micrococci, which were frequently aggregated in large masses. Fat cells were abundant, as well as cells resembling Gluge's corpuscles, giant cells, and polymorphous connective tissue cells—the products of inflammation, the fibroblasts of Ziegler, and, lastly, large numbers of small round cells, especially abundant in the region immediately surrounding the ray. According to Parker and Hasting, there is a variety of mycetozoa occurring in the pus, the place of production being the muscular system, especially the diaphragm, intercostal muscles, etc., in this respect resembling the trichina, and the above, as well as the *Coccidioides immitis* (pathogenic to the guinea-pig), *Medical Record*, September, 1897, p. 127, and a special treatise on the same collection. The entire subject is a large one, and needs a much longer and fuller treatment than I have been permitted to give.

ON THE IMPORTANCE OF THE EARLY RECOGNITION OF
CERTAIN DISEASES AND CONDITIONS OF
THE EYE

BY THE GENERAL PRACTITIONER,
WITH SUGGESTIONS REGARDING THEIR MANAGEMENT.*
By H. D. W. CARVELLE, M. D. (HARV.)

THE object of this paper is to offer a few suggestions to the general practitioner so that he may better determine what diseases, injuries, and conditions of the eye he should treat, and what cases to send to the ophthalmologist. Until within a few years instruction in errors of refraction and diseases of the eye were not considered necessary by the leading medical schools, and many students are now graduated without a knowledge of the use of the ophthalmoscope, and are unable to diagnose the ordinary external diseases of the eye. That a more thorough knowledge of the eye is not required is injurious to the patient, the physician, and the ophthalmologist. The patient often suffers by not being sent to the specialist in time because the physician does not recognize the gravity of the case, and thereby loses his confidence; and when he is sent to the ophthalmologist, or drifts into his hands, it is often too late for him to be of any service.

It has been my experience that nothing redounded more to the credit of the physician when he was called upon to treat an eye case that he did not quite understand than to frankly admit it to the patient and send him to the ophthalmologist; and, on the other hand, he would incur their everlasting condemnation if he persisted in treating a case that he did not understand, or that turned out badly, or sent to the specialist when it was too late.

To illustrate I will cite the following case:

Mrs. C., aged fifty-seven, was intubated suddenly with severe pain in head around the orbit, nose, and by loss from twenty that became she was blind. When I saw her three days later she was still suffering with severe pain in the eye. There was no perception of light, the pupil was dilated, the cornea was cloudy in appearance and anesthetic. The anterior chamber was shallow, the iris well shaped, pupal and the cornea lost from increased intraocular tension. It was a typical case of acute glaucoma. The family had suggested that a consultant be procured, but the attending physician said it was too dangerous until the inflammation had subsided and passed on a course of atropine, which was the method chosen. It could have had lasting if it had not been. The patient has had some relief and nothing would be done for her as this case may have been cured if the disease had been recognized. At present, it is, that long illness, an unnecessary excruciating was performed, was almost probably have saved her sight and had spared her blindness. And now she is blind and cannot see and the loss of the eye and the pain from the inflammation of the cornea will now be very difficult to be relieved.

Emergency resuscitation of the apnoeic infant is an important acquisition to the general practitioner, as it will enable him to manage hypoxic neonates, or prevent asphyxia occurring during feeding and removal of the nipple.

nerve; but it is not absolutely necessary, as there are objective and subjective signs which will indicate the cases he should treat, and those he should refer to the ophthalmologist.

The extensive ground I am obliged to cover precludes the possibility of devoting more than a passing notice to any one subject in a paper of this kind, so I will call your attention only to the more important ones.

Injuries of the Eye.—In wounds of the lids involving the margin, always bring the edges into perfect apposition by a suture on the conjunctival side, in the margin and through the skin on the outside; otherwise an unsightly notch will remain. Wounds of the conjunctiva should be brought together with fine sutures, and, in case the sclera is lacerated, it is usually sufficient to suture the conjunctiva over it. Of course strict antisepsis should always be observed.

In penetrating wounds of the eye and where foreign bodies have entered the eyeball, the case should be referred to the ophthalmologist on account of their liability to cause cataract, loss of sight, and sympathetic ophthalmia.

I have seen many cases that were hopelessly blind in both eyes from an injury to one that, if they had had proper treatment and prompt removal of the injured eye at the outset, would be in the enjoyment of good sight in one eye. The following is a case in point:

Mr. G. C. W., seventy-seven years of age, while splitting kindling wood, a splinter struck the left eye, causing immediate loss of sight. The right eye became affected in a short time, and in four months he was blind in that eye. He was treated by his family physician. When I saw him nine months after the injury, both eyes were completely disorganized, and he was still suffering with pain in the right eye. If this man had had the injured eye promptly enucleated at the time of the injury, or before sympathetic ophthalmia settled in the other one, he would to-day have one good eye, instead of which he is hopelessly blind.

In all penetrating wounds of the eye, particularly in or near the sclero-corneal junction, there is danger of sympathetic ophthalmia, and when this disease is once established the case is generally hopeless.

When called upon to treat an inflamed eye, always look for a foreign body either on the cornea or under the lids.

Not long ago a case came to me that had been treated all sorts of ways, but without improvement, so which the patient had a very badly inflamed eye in the cornea that could not be opened. I saw a farmer within a few days of this, and I gave him a frank statement of the case, and he was very grateful. He had a number of medical gentlemen had had much expense, but was not relieved. I told him that I would be happy to see him, and he was very grateful. The cornea was inflamed, and the eye was very painful. I told him that I would be happy to see him, and he was very grateful.

I told him that I would be happy to see him, and he was very grateful. The cornea was inflamed, and the eye was very painful. I told him that I would be happy to see him, and he was very grateful. The cornea was inflamed, and the eye was very painful. I told him that I would be happy to see him, and he was very grateful.

I told him that I would be happy to see him, and he was very grateful. The cornea was inflamed, and the eye was very painful. I told him that I would be happy to see him, and he was very grateful.

cent. solution of cocaine to deaden its sensibility. If the foreign body is on the surface, it can usually be dislodged by a cotton-tipped probe, but if imbedded in the corneal tissue, a blunt needle or spud should be used, and great care should be observed not to allow the instrument to go through the cornea and cause cataract, as it is only one twenty-eighth of an inch in thickness in its center.

Diseases of the Conjunctiva.—In ordinary conjunctivitis there is swelling and redness of the conjunctiva, the superficial vessels are engorged, and there is more or less mucoid secretion that collects in the inner corners of the eyes. The eyeball is not tender, the reaction of the pupil is normal, and there is no dimness of vision except momentarily when a shred of mucus passes over the cornea. The redness is more marked in the lids and shades off toward the cornea. The treatment consists in the use of mild astringents, as boric acid two to four per cent., or alum one per cent., instilled into the eyes three or four times a day.

In children, and rarely in adults, we have a form of conjunctivitis which is characterized by the appearance of small pustules on the conjunctiva near the margin of the cornea; there may be one or several. The usual causes are gastro-intestinal disturbance, nasal catarrh, and scrofula, and they are treated by regulating the diet, having the patient eat only plain, easily digested food, avoiding all sweets, pastry, nuts, etc. A tablet of rhubarb and bicarbonate of sodium, each two grains and a half, after meals, is an excellent remedy to regulate the stomach and bowels. Locally have the eye bathed freely several times daily with a warm two-per-cent. solution of boric acid, and either dust on the pustules daily a little finely powdered calomel—but be sure that the patient is not taking the iodide of potassium—or you may apply a small piece, twice as large as a pin head, of an ointment of the yellow oxide of mercury of the strength of one grain to one drachm of vaseline into the conjunctival sac and gently rub the lid over the eye.

It is the fashion among the laity and even by many physicians to call every eye that is red "pink eye," which is equivalent to saying that it is not a serious thing and does not require any attention, and I have seen many cases where the sight was permanently injured by adhesion of the iris to the anterior surface of the lens that had been pronounced "pink eye" by the family physician, and the patient had not sought the specialist until sight began to fail or the eye was painful. Pink eye is a popular term for an acute contagious mucopurulent conjunctivitis of horses, characterized by a pink appearance of the eyeball; but it should not be applied to the human race, as it does not mean anything, and serious diseases are often pronounced "pink eye" and treatment neglected until the eye is permanently impaired. I have a case now under my care that was treated for "pink eye" with strong astringents for a week by the family physician before I saw him, and his eye is nearly useless from posterior synechia and plastic exudation in the pupil.

Every case of eye disease should be thoroughly examined and a diagnosis made. If you are unable to make a diagnosis, and there are serious symptoms, the case should be sent at once to an ophthalmologist. Another common

error that many physicians make is to call a simple redness of the lids associated with a feeling of gravel in the eye, granular lids, and to use harsh astringents, as a strong solution of sulphate of zinc, and the crayon of copper, when a mild astringent is all that is necessary, as the case is often a slight conjunctivitis, the result of an error of refraction.

In chronic granular conjunctivitis the palpebral surfaces of the lids are red, rough, and thickened from the presence of sago-like bodies in the conjunctiva. The eyeball may become secondarily affected, as by corneal ulceration and pannus. In the latter condition the upper half of the cornea becomes opaque and red from the development of blood-vessels in its substance. The treatment consists in using astringents, such as zinc sulphate two grains to an ounce, or cuprum sulphate one grain to an ounce, two or three times a day, and applying to the palpebral surface of the lids the crayon of alum or copper or the glycerine of tannin ten grains to thirty grains to an ounce; and in some cases a two-per-cent. solution of nitrate of silver, applied to the lids and washed off with water after a few moments, to prevent its coming in contact with the cornea, is an excellent remedy. When pannus exists, atropine should always be used to prevent iritic complications. These cases are chronic and obstinate, and one is obliged to go through the whole list of remedies often before the case is cured. Latterly compression, squeezing out the contents of the granules with a specially made forceps, is practiced with success in some cases.

Diseases of the Lachrymal Canal.—These are usually caused by an extension of inflammation from the conjunctiva, or from the nose resulting in obstruction in the duct. Occasionally the puncta become occluded, when all that is necessary is to dilate them, and the tears will find their way into the nose. When there is obstruction in the duct, making a vertical nick in the punctum and passing probes of gradually increasing size once in four or five days will usually result in a cure. When the sac is inflamed it is necessary to syringe out the canal with an Anel's syringe, containing a saturated solution of boric acid or other mild astringents. If the obstruction is in the nose, it must receive appropriate treatment.

Longitudinal ulcers are of frequent occurrence in some severe obstruction and inflammation of the sac, but previously existed. If called to a case where there are pain, tenderness, and swelling at the stricture, where ulcers have previously existed, where the swelling is so great as to prevent matter in the sinus from entering the sac, and preventing a free outward excretion, should be made over the sinus and with the application made cross the swelling (Fig. 18), then pressure should be passed to overcome the obstruction or a fistula will result.

Grammatical Anomalies.—The composition of many little children is one of the most curious phenomena that can be called upon to testify, and one that cannot even think that there are other causes of the sort. The child, being just a few days over the half of one, will already be not only swilling of the first and purest of non-purulent *diarrhoea*. In some cases it is so, with diarrhoea.

only requiring cleanliness and a mild astringent, as boric acid, to check it. In other cases it is so very severe that the lids swell enormously and the cornea sloughs within a few days from constriction, and interference with its nutrition. When called to see a case of this kind, do not be satisfied with trying to see the cornea, but with a pair of retractors separate the lids and get a good view of the cornea. Thorough antisepsis is absolutely necessary—cleansing the eyes with a solution of the bichloride of mercury (1 to 5,000) every hour at least, and applying astringents to the conjunctiva of the lids according to the severity of the case. If the cornea is not implicated, brushing the palpebral conjunctiva with a one-per-cent. nitrate-of-silver solution once a day and washing it off with water is usually as strong a remedy as is necessary. In addition, a one-per-cent. solution of alum may be dropped into the eye two or three times a day. If there is a corneal ulcer near the margin, use a one-eighth-of-one-per-cent. solution of eserine sulphate three times a day to prevent prolapse of the iris in case perforation of the cornea takes place. If the ulceration is near the center, use a one-fourth-of-one per-cent. solution of atropine sulphate two or three times a day.

There are some cases where the discharge is very copious and the swelling so great that stronger solutions of nitrate of silver are indicated, as from two to four per cent., but great care must be exercised not to allow it to come in contact with the cornea. The cornea should be inspected every day and complications met as they arise. I would also add that if antiseptic douches were freely used in every lying-in case before and during labor, and the child's eyes carefully cleansed with bichloride of mercury (1 to 5,000), we would see very few cases of purulent conjunctivitis in newly born children.

Diseases of the Cornea.—When the cornea is inflamed it loses its transparency. By oblique illumination and looking at the cornea from different angles there is usually no difficulty in seeing a corneal ulcer. The eye is more or less painful, and photophobia is usually a very marked symptom. The pupil reacts to light and shade. In children phlyctenular keratitis, which consists of one or more small ulcers on the cornea, is one of the most common diseases of the eye. Photophobia is very marked, the child often burying its face and avoiding the light until very late in the day. There is usually a papular eruption around the eyes and more or less rhinitis. Atropine and yellow oxide of mercury are usually the best local remedies for this disease. When the inflammation is severe, the eye should be dropped into the eye three times a day gives great relief. The child should have good air, exercise, the diet should be plain and nourishing; internally quinine, iron, and cod-liver-oil.

In normal cases with progressive rot in the lower (higher) position, should be used if the rot is in the middle (higher) part of it, even the growing of the rot in a low (high) position, and in the middle (higher) part.

freely every hour and a protective bandage. Pyoctanin, 1 part to 1,000, instilled into the eye three or four times a day clears up the pus in a marvelous manner in some cases. If the amount of pus is large, half filling the anterior chamber, paracentesis will have to be done, being careful not to wound the lens with the instrument, or cataract will result. In the interstitial form of keratitis atropine should always be used, as the iris sooner or later becomes inflamed and adhesions form. Potassium iodide or some of the salts of mercury should be used, as the cause is always due to congenital syphilis, and is associated with a peculiar conformation of the teeth, first described by Hutchinson. The cornea is usually of a uniform ground glasslike opacity; occasionally it becomes red from the development of blood-vessels in its structure. After the inflammatory stage is passed, yellow-oxide-of-mercury ointment assists wonderfully in clearing up the opacity.

Diseases of the Iris.—The most important disease of the iris is iritis. The more common causes are syphilis and rheumatism. It is a very serious disease, and the sight of a great many eyes are impaired and often lost because of a neglected iritis, or one that has not been recognized early and treated properly. The symptoms are pain in the eye and brow, tenderness of the eyeball, photophobia, lachrymation, and dimness of vision. There is a ring of redness around the cornea which shades off toward the lids. The redness is caused by the engorgements of the deeper vessels, while in conjunctivitis the superficial vessels are congested. The aqueous humor is cloudy, the pupil small, sluggish, or immovable, and if a mydriatic is used it dilates irregularly, as portions of the margin of the pupil have become adherent to the anterior capsule of the lens. If only one eye is attacked there will be a well-marked difference in the color of the iris; it will have lost its luster and will appear darker than its fellow. Atropine is the sheet anchor in this disease, and it should be used early to prevent adhesion of the iris to the anterior surface of the lens, and a half to a one-per-cent. solution should be instilled into the eye often enough to keep the pupil thoroughly dilated during the whole course of the disease.

A precaution that should always be observed in the use of atropine in patients over forty years of age is to watch the tension of the eyeball for fear that glaucoma may be brought on by its use. Employ it often enough and long enough only to keep the pupil dilated while the inflammation of the iris lasts. Hot applications are very grateful to the eye and may be used at intervals. In the rheumatic form of the disease full doses of salicylate of sodium often relieve the eye in twenty-four hours, and it should be continued as long as the eye improves.

When syphilis is the cause the salts of mercury are indicated, and should be given in frequent doses until the eruption of the skin has subsided. The disease is usually cured by the use of the iodide of potassium, and the eye improves rapidly. In the treatment of iritis the patient should be kept in a dark room, and the eye should be protected by a bandage. The use of atropine should be continued until the inflammation has subsided, and the eye has returned to its normal condition.

Glaucoma.—This is a disease that if not recognized early will cause blindness in acute cases in a few hours sometimes. The symptoms are pain in and around the eye, coming on suddenly, often accompanied by nausea. Sight becomes impaired and increases to total blindness. Preceding the attack there may be periodical blurring of sight, diminution in the range of accommodation, and tendencies to see rainbows around the light. The appearance of the eye is very characteristic, the cornea is steamy, the pupil is large and does not react to light, the anterior chamber is shallow, there is circumcorneal venous injection and fullness of the anterior scleral veins, and a dull purplish discoloration around the margin of the cornea. All these conditions are caused by an increase in the intra-ocular fluids, rendering the eyeball harder than normal. This can be easily determined by having the patient look down, and with the tip of the middle finger of each hand on the eyeball press gently, first with one finger, then with the other, and any variation from the normal resistance can be perceived. If one eye is healthy the tension of the diseased eye can be compared with it; if not, you can compare it with your own. After a little experience it is an easy matter to discover an increase or decrease in the intra-ocular tension. With the ophthalmoscope, excavation of the optic nerve will be seen, the central artery of the retina may be pulsating, and the retinal veins are enlarged and tortuous. The treatment is half a grain of eserine sulphate, five grains of cocaine hydrochlorate, to an ounce of water, to be instilled into the eye every hour or two until the eyeball becomes softer, pain is relieved, and vision improved. If there is no improvement in twenty-four hours, iridectomy or sclerotomy should be performed without delay. This disease, as well as iritis, is often mistaken for neuralgia by the general practitioner, and in too many cases the patient is hopelessly blind before he discovers his error.

It should be borne in mind that neuralgia is not accompanied by any disturbance of vision or inflammation of the eye, while in glaucoma and iritis there are marked characteristic symptoms peculiar to each disease. Each causes pain in and around the eye, but in iritis it is more in the brow, while in glaucoma the pain may be more severe around the eye. The pupil in glaucoma is large, while in iritis it is small. In iritis the eyeball is tender and the tension is usually normal, while there is not usually tenderness of the eyeball in glaucoma, but the tension is increased. In iritis the sight becomes blurred after a few days, while in acute glaucoma vision may be lost in twenty-four hours. When called to a patient beyond middle age, who has been taken suddenly in the night with severe pain in and around the eye, with nausea and disturbance of vision, if the pupil is dilated and immovable, the tension of the eyeball increased, you may be sure that it is glaucoma and nothing else. I lay particular stress on the diagnosis of iritis and glaucoma, because I have seen many cases in which the patient has either lost their sight or it was permanently impaired, because the condition was not recognized.

Loss of Retraction.—In these days of progress and enlightenment we should not expect that patients would be

pital, in the *Medical Record* of December 3, 1892, suggests the use of an apparatus which carries out this idea perfectly, the apparatus being so constructed that the vapor of the alcohol is recondensed and is used over again.

Another common method of heat sterilization is by substituting aniline oil in place of the alcohol. This method possesses no advantages over those using alcohol, and has the disadvantage of being very disagreeable to handle and very liable to mishap, in that the boiling point of the oil is about 180°C ., and it needs constant care to see that the temperature, indicated by a thermometer immersed in the oil, does not go above the heat limitation of the gut. So much for the heat process.

The methods employing chemical agents consist mostly of carbolic acid and corrosive sublimate as the germicide, and are, as a rule, inferior to the heat-alcohol method.

With the object in view of obtaining the most satisfactory method for preparing gut, not being satisfied with the results obtained by boiling it in alcohol, about a year and a half ago, during an internship at the City Hospital in this city, I communicated with most of the large hospitals of the country, asking their methods of preparing gut and the results obtained.

Some indorsed the boiling-alcohol method, others stated that the results were doubtful, others used chemical solutions, and a few went so far as to say that catgut was no good for ligature purposes. After experimenting with most of the formulæ furnished me (requiring a period of about eight months), I concluded that gut prepared by the following formula gave the most satisfactory results, in that it rendered the gut sterile, never destroyed its texture or strength, and required no special apparatus for its completion. The method is as follows: Place the raw gut, after removing all colored silk, string, etc., in a 1-to-1,000 ethereal solution of bichloride of mercury and allow it to remain there six hours; then wind on sterilized glass spools and place the spool containing the gut in the same solution for six hours longer. Wash in pure ether and then boil in absolute alcohol at the atmospheric pressure for ten minutes, the object being to remove all traces of the bichloride.

Gut prepared by this method I have subjected to a thorough bacteriological test and found it to be absolutely sterile. Some may maintain that the bichloride solution weakens its texture; on the contrary, it hardens it, for gut prepared by this formula will remain longer in a wound before being absorbed than the same size prepared by the heat-alcohol method.

The ethereal solution overcomes the protection the oil and talc give against the action of the bichloride and your germicide and makes good.

Silk threads impregnated with the anthrax spore and then dipped in ether, all were found to be sterile after six hours immersion in the bichloride solution.

This method of preparing gut has been satisfactorily employed at the Rockefeller City Hospital, at the Whitehead, Brown, Hospital, and in many instances in their private work in this city and others.

I consider this method superior to the others in that it gives uniform results and there is no chance of mishap.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by
D. APPLETON & Co.Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 11, 1894.

THE CONTEST WITH MORBID GERMS.

IMMUNITY from certain diseases, whether natural or casually acquired, is still to a great degree mysterious, notwithstanding ingenious theories and experiments. Mr. A. D. Cooper, of London, contributes an article on the subject to the May number of the *Indian Medico-chirurgical Review* in which he discusses it from two standpoints, its nature and the conditions under which it has been observed, and the application of knowledge thus obtained to the relief, cure, and prevention of disease in man and in the lower animals.

At one time, he says, it was supposed that immunity was due to an alteration of the tissue cells, either local or general, or to the presence of certain substances of bacterial origin in the blood. Again, it was found that fresh blood and, still later on, blood-serum had the power to destroy bacteria. However, the writer says he does not intend to discuss theories, but rather to follow the line of investigation adopted by Mr. Hankin, of Cambridge, who remarks that immunity, whether natural or acquired, is due to the presence of substances which are formed by the metabolism of the animal rather than by that of the microbes, and that they have the power to destroy either the microbes against which immunity is possessed or the products on which their pathogenic action depends. He also is careful to admit the possibility of there being other factors concerned in conferring immunity.

It seems that Mr. Hankin undertook a series of experiments in order to find some constituent of blood-serum which perhaps had been overlooked by other investigators, and he found a ferment-like proteid substance, commonly known as cell-globulin, which possessed the peculiar power. He tested the action of this substance on anthrax bacilli and found that it destroyed them. But similar substances are found in animals that are not proof against anthrax; therefore something more, either in the nature of quantity or in that of quality, is necessary to account for the immunity, and this Mr. Hankin sought to obtain by studying the blood of rats. It has been observed that the blood of rats is more alkaline than that of any other animal. The susceptibility of these animals to anthrax is in inverse proportion to the alkalinity of the blood, and any circumstance that diminishes the alkalinity of the blood increases the susceptibility. In demonstration of this fact, two rats were fed, one on vegetable diet and the other on animal diet, for a period of about six weeks, with the result that the one fed on vegetable diet died and the other escaped. Similar results have been obtained by others under the same circumstances. Mr. Hankin's conclusions are, after a series of experiments, that the immunity enjoyed by rats depends upon the proteid substance, but that its

look much alike, yet it is now believed that there exist minute differences in the composition of each, and that one individual may be more fitted to the growth of one form of organism than to another. This, then, is what is understood as heredity at the present day—a certain peculiarity of soil which favors the development of some specific germ, and, applied to cancer, it must be admitted that a certain peculiarity of deposit may exist which is capable of being transmitted from parent to child.

MINOR PARAGRAPHS.

THE FIRST AMERICAN SYMPHYSIOTOMIST.

An individual named Coggin, who is said to write A. M., M. D., Ph. D., etc., after his name, and whose abode was lately in the town of Keener, Alabama, seems to have been erroneously credited by Dr. Robert P. Harris, of Philadelphia, in an article published in the *New Orleans Medical and Surgical Journal* for February, with having been the first person to perform public symphysiotomy in America. Dr. Harris's statement, resting on Coggin's declarations, was copied into the *Alabama Medical and Surgical Age*, and excited the curiosity of the physicians of Etowah County, in which the town of Keener is situated, for they had never heard of the case. Consequently the Etowah County Medical Society investigated the matter, and found that there was absolutely no ground for Coggin's story, also, incidentally, that much mystery hung about his admission into the medical profession. The whole story is given by the president, Dr. Erasmus T. Camp, of South Gadsden, in a letter to the editor of the *Age*. Dr. Camp's letter is utterly destructive of Coggin's pretensions, and abounds in shrewd comments and unreserved statement. The credit of having first performed symphysiotomy in this country rests therefore with Dr. Charles Jewett, of Brooklyn, to whom it had been awarded prior to Dr. Harris's article.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 7, 1894:

DISEASES.	Week ending Aug. 7.		Week ending Aug. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	0	22	0
Scarlet fever	49	0	31	0
Cerebro-spinal meningitis	0	0	0	0
Mumps	0	1	20	2
Dysentery	10	1	12	5
Smallpox	1	0	0	1
Total	104	2	104	8

Letters to the Editor.

THE RUPTURE OF THE APHURIC OF THE LOWER END OF THE UMBILICUS.

To the Editors of the *New York Medical Journal*.

I have the honor to acknowledge the receipt of your issue of the 10th inst. containing an account of a case of rupture of the umbilicic artery, and to express my sincere interest in the case.

before the Philadelphia County Medical Society. The second paragraph should read: "The surgeon stood in front of the patient and interlaced his fingers beneath the *pronated* wrist and palm of the injured member," etc., *not* "supinated wrist," as printed. As all that follows depends upon this position of the wrist I trust that you will publish this correction.

THOMAS S. K. MORTON, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of May 2, 1894.

The President, Dr. FREDERICK HOLME WIGGIN, in the Chair.

Fracture of the Patella.—Dr. CHARLES PHELPS presented a case of fracture of the patella which he had wired about a year ago. There was now nearly perfect motion of the joint, and apparently solid osseous union. He said that he had usually begun to make lateral motion at the end of two weeks, and flexion at the end of about four weeks.

Dr. JOHN W. S. GOTLEY said that he had seen many of Dr. Phelps's cases of fractured patellae, and that he had been particularly interested in the degree of flexion he had obtained within a few weeks' time. He had feared that fracture would result, and although he had never known of its occurring in any of these cases, he had felt that Dr. Phelps had been in too much haste to obtain flexion. The case which had just been presented showed that a wonderfully good result could be obtained after a year. It was worth waiting this time to secure such a result.

Dr. PHELPS said that in two of his cases fracture had occurred under this treatment, and in them the accident had been due to the fact that he had not taken sufficient care to obtain enough lateral motion before attempting to get flexion. In these cases one patient had got osseous union without having been wired again, for it had only been necessary to put up the limb for about two weeks and then resume passive motion. In neither of these cases had the patient known that fracture had occurred. He did not regard it as a very serious complication.

Dr. STEPHEN SMITH said that he had had an opportunity of seeing a number of these cases in the St.-Louis Hospital, Paris. The surgeon there had employed a peculiar incision, somewhat like that used in cases of excision of the knee, and his practice had been to let his patient get up and walk at the end of two weeks, and after six weeks to return to work. He had had no bad results in more than fifty cases, except in one instance in which refraction had occurred. He had wired in all the cases, and apparently with the most excellent result. The speaker said that he had also seen in the same surgeon's service a case of double rupture of the tendons of the quadriceps in which an excellent result had been obtained in four weeks after wiring. These facts would seem to indicate that we usually waited too long before allowing the limb to be used.

Dr. PHELPS said that he was glad to know that the operation was growing in favor. When he had begun to use it, it had been regarded as almost criminal.

Impacted Subtrochanteric Fracture of the Right Femur.—Dr. J. W. S. GOTLEY presented the upper end of the right thigh bone of a man, forty-six years of age, who during a prolonged delirium, and while under alcoholic intoxication, had fallen down the steps to the cellar on the 18th of April, 1891. A few hours after the accident he had been taken to St. Vincent's Hospital, and had been examined by the house surgeon, who had noticed that the great toe of the right foot

pointed toward the ball of the left great toe." That there was much tumefaction below the hip, that the injured limb was shortened about an inch and a half, and that this limb was rotated inward and adducted. This faulty position of the leg and foot, and the shortening, together with the absence of crepitus, had led the house surgeon and four other members of the house staff to believe that the man had suffered post-iliac luxation of the thigh bone. The patient had been examined by the speaker on the day after his admission, and also by Dr. Wiggin, Dr. Syms, and Dr. Gibbons, all of whom had agreed that there had been a fracture. The question of the particular site of the fracture had been then examined. He had thought that the case might with propriety be called an impacted subtrochanteric fracture, and had based his diagnosis upon the character of the deformity, the position of the limb, the degree of shortening, and the absence of crepitus. The upper fragment had been drawn upward and forward by the psoas and iliacus muscles, and outward by the glutei muscles, and the shaft had been drawn in by the adductor muscle, while the inverted position of the limb had been maintained by the impaction of the shaft's end into the upper fragment. After extension and rotation of the limb had several times been made, the three surgeons named had detected no crepitus and no motion of the limb. It had only been after this free rotation and extension that the crepitus had been felt, and that the consequent disimpaction of the fragments had allowed the limb to become everted and to remain in this new faulty position while unsupported. A long external splint with extension, after the method of the late Dr. Beck, had been then applied. In the course of three days after admission the patient had become delirious and almost uncontrollable. On the fourth day his body temperature had risen to 104°, and had continued to rise up to the ninth day, when it had reached 106°. In spite of active treatment for *mania a potu* with meningitis, he had died on the

et and sawed off a few inches below the fracture, showed the line of fracture to be about a sixteenth of an inch below the lesser trochanter, to be transverse in half of the circumference of the bone and to extend obliquely downward and inward for an inch and a half, and finally upward and backward to the base of the lesser trochanter, so as to give the upper fragment a wedge-shaped projection, which, in life, had been carried forward and a little outward and upward toward the pelvis. The deformity observed on the patient's admission had been caused by this projection and also by the end of the lower impacted fragment being held in position by the adductors muscles, until disimpaction had been effected by extension. Disimpaction had been justifiable in this case on account of the extent of the deformity, but ordinarily when the deformity was not great in cases of suspected impacted fractures, it was not wise to attempt to obtain crepitus. It was proper to add that, in view of the inordinate rise of body temperature to 106° in this case, pus had been looked for throughout a careful necropsy, but none had been found. The only evidence of inflammatory action in the injured parts had been great redness of the medulla of the upper as well as of the lower fragment of bone. The hip joint had been found intact and there had been a marked depression in the cancellated structure of the upper fragment in which the point of bone from the lower fragment had been lodged. In the fresh state the marrow of the bone had been intensely red, so that it was barely possible that the high temperature might have been accounted for by the supervention of myelitis. It had been strictly a subtrochanteric fracture. Sir Astley Cooper had described a case of extreme deformity and obliquity. The fracture had begun above the trochanter minor and had extended two or three inches down the shaft.

DR. PARKER SYMS said that he had been much interested in the case, and especially in the confirmation of the diagnosis. At the time he had examined the patient the impaction must have been broken up, for while there had been no distinct crepitus there had been a distinct slipping of the fragments past each other, with an obscure crepitus. When the limb was rotated, the deformity at the anterior aspect of the thigh was so great that he had expected the autopsy to show a large effusion of blood.

Dr. GORLEY said there had been no more effusion of blood found at the autopsy than in an ordinary case of fracture.

Dr. STEPHEN SMITH said that the case given in the picture was new to him, but it certainly described very accurately the condition present.

1 2 3 4 5

Reports on the Progress of Medicine

$$0.1 \text{ N } \text{H}_2\text{N}^+ \text{Cl}^- \approx 10,000 \text{ N}$$

THE UNIVERSITY OF CHICAGO

Prostatectomy

Prostatectomy—The entire prostate, the gland of the male sex, and the primary portion of the urethra are removed. My edition of *Nelson's Human anatomy*, Vol. 2, p. 289, shows an illustration of the following points:—1. Preoperative incision of the scrotum. 2. Exposure of the incision of the rectovesical pouch. 3. Dissection, complete or as far as possible, of the rectovesical pouch. 4. Removal of the prostate, bladder, and all portions of the *Urdarm* (rectum and sigmoidum). The incision in the scrotum, which is made after the prostate is removed, is not shown.

© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 111–117



Heb 13:1. The recipient had received a full-time ministerial education, intense polio-type regression, and family and rural isolation. The subject began churchwork from his own

bleeding points in the parietal incision are secured and the wound dusted with iodoform before the bladder is opened. The incision in the bladder must be a free one, and the walls of the viscus are secured to the skin by four sutures. The bladder is then carefully and repeatedly douched with a carbolic-acid solution (1 to 200), the phosphatic concretions on the walls being removed with a lithotomy scoop. The viscus is then partially filled with the carbolic solution, and the patient tied up in the lithotomy position. The second part of the operation consists in the removal of the prostate through a modified median lithotomy wound. An ordinary bougie or sound is passed and given to an assistant. The left forefinger in the rectum, an incision is made in the perineal raphe and gradually deepened till the apex of the prostate is reached, but without penetrating the urethra or bladder. The rectum is carefully separated from the posterior surface of the prostate and a vertical incision is then made through the posterior and inferior part of the prostate capsule. The capsule is then gradually shed off the gland to either side by means of a blunt instrument like a periosteal elevator, the assistant in the meantime pressing the prostate down in the perineal wound with his fingers introduced into the bladder through the suprapubic opening. (If sufficient room for this isolating of the prostate has not been afforded by the median perineal wound, it may be obtained by supplementing the median incision by a lateral one somewhat on the lines of Dittel's, and curving outward and backward from the posterior end of the median cut to a point between the anus and the posterior end of the ischial tuberosity, nearer the former than the latter. This may be done on one or both sides.) All bleeding points being secured, the surgeon, after carefully washing his left index finger in the carbolic solution, puts two fingers of the left hand into the bladder from the suprapubic wound and, pressing the prostate (now pretty freely movable) down into the perineal wound, removes by the fingers of the right hand in the perineum the entire prostate, or as much of it as he deems necessary to relieve the neck of the bladder from all pressure and bring it down to a level with the prostatic pouch in the base of the bladder, judging the amount to be removed by manipulation of the parts between the fingers of the two hands. Should the prostatic tissue be unusually tough the fingers may be supplemented by a blunt instrument or Volkmann's spoon carefully used. During the entire operation neither the urethra nor bladder is opened further than is involved in the suprapubic incision." The after-treatment consists in the antiseptic treatment of the wound, draining the bladder through a catheter made of india-rubber catheter and fastened in, and frequent douching of the viscus with mild carbolic solutions. The wounds are allowed to heal by granulation. In case of intravesical projection of the middle lobe, Mr. Nichols says, this should be neglected for the time being and twisted off eight or ten days later through the suprapubic opening, the mucous membrane having been first reflected from the gland. The advantage of the operation consists chiefly in the fact that the external parts are not subjected to the septic contamination of the internal organs, and that the patient is not exposed to the danger of fatal hemorrhage or sepsis.

A New Method of Curing Obstinate Facial Fistulae.—A. E. Williams, M.D., reports in the *Transactions of the Chicago Medical Association*, 1890, a new method of curing facial fistulae. A patient presented himself with the following history: "I have a facial fistula which has been present for many years. It is situated in the lower part of the face, near the chin. The discharge is purulent and offensive. The fistula is not cured by any of the usual methods of treatment." The patient had been treated by various methods, but without success. The author had the patient treated by the following method: "The fistula was opened by a small incision, and the contents were removed. The wound was then closed by a suture. The patient was kept in bed for a few days, and the wound was dressed with iodoform. The fistula was cured in a few days." The author states that this method is applicable to all cases of facial fistulae, and that it is a simple and effective method of treatment.

use of bougies. From the fistula there branched off four tracts, two of which led to the upper segment of the colon, one to the lower, and the fourth into a loop of intestine twisted upon itself. The lower segment of the colon was adherent to the uterus. On account of the pain and fear of sepsis the author decided not to use the Dupuytren forceps, but instead introduced a full-sized rubber tube into the lumen of the gut, extending from six inches above the fistula almost to the anus. All the fecal matter passed through this tube and the fistula was soon healed, with the exception of the blind tract, which the patient declined to have operated on.

Stricture of the Rectum and Sigmoid Flexure.—Dr. Joseph B. Bacon (*Matthaei's Medical Quarterly*, vol. i, p. 1.) has devised the following novel procedure for dealing with obstinate strictures of the rectum and sigmoid: Where the stricture is high up in the rectum or sigmoid the patient is anesthetized and placed in extreme Trendelenburg's posture and a median laparotomy incision is made from the pubes to the umbilicus. This incision enables the operator to see the rectum and determine how much of the sigmoid he must use to fold over the stricture and anastomose below. This having been determined, the sigmoid is drawn well up into the wound and clamped above and below the point selected for anastomosis. The male half of a medium-sized Murphy's button is then fixed into the gut at this point in the usual way. The operator then scarifies the portions of the sigmoid and rectum that are to be approximated. The next step is to place the female half of the button in position just below the stricture, and it is done as follows: An assistant places this half of the button over the trocar point and passes it through the anus and up the rectum to a point just below the stricture, keeping the trocar toward the anterior wall of the gut. The operator, by pressing over this point with a dressing forceps, causes the trocar to perforate the wall of the intestine and carry the neck of the button with it. The two halves of the button are then approximated and the anastomosis is complete. Two or three sutures are then placed in the peritoneal layers of the gut and rectum in order to approximate the scarified surfaces and thus produce a firm septum. The abdominal wound is now closed and the button left to liberate itself, which it does in about seven to nine days. A long, narrow clamp is then introduced in the opening made by the button, and the septum produced by the folded gut together with the stricture is grasped between its blades. The clamp is tightened from day to day until it cuts its way through. This occurs in about three days. The caliber of the rectum is thus increased by that of the gut brought down. The severed edges of the stricture do not unite because the healthy gut utilized in forming the new channel around the stricture acts as a connecting link between them. When the stricture is low in the rectum the Kraske method may be used for access to the parts. The chief advantages alleged for the method are that it obviates the necessity of an inguinal anus and permits of the complete division of the stricture without danger of its reforming.

Hydrocele. Neumann (*Clinic medical*, Jan. 21, 1890) has recently employed successfully the following simple procedure in six cases of hydrocele: The sac is punctured with an ordinary trocar and the stylet withdrawn under antiseptic precautions. When the fluid has escaped the cannula is withdrawn for a very short distance, but not out of the sac. It is fixed at this point by a soft opening of gauze or wadding and remained for about forty-eight hours. In all the cases he has obtained without suppuration or inflammation the absorption of the opacified surface of the internal wall of the sac and the complete cure of the hydrocele. The duration of the treatment has been from seven to nine days. He alludes for the treatment that it is a less complicated, less painful, and of shorter duration

Epileptic Automatism.—The *Lancet* for July 21st publishes an interesting account of several cases related by Dr. W. S. Coleman, of London, in which no positive evidence of epilepsy could be traced: The first case, which had come under his own observation, had been that of a young woman, sixteen years old, who had been married three months and, while under remand on a charge of child stealing, had been brought to him for an opinion as to her responsibility for the theft. On the evening previous to the act she had had severe frontal headache and a sense of weight at the vertex, but there had been no evidence of anything like an epileptic seizure. She could not remember getting up in the morning, although she had been down to breakfast, when she seemed queer, ate nothing, and did not speak. At eleven o'clock she had left the house and soon after returned with an infant, which she had obtained by sending the young nurse in charge of it away on an errand. When her husband had come home in the evening he had found her rocking the child and pretending to nurse it. She had told him it was her child, and had become wildly excited, insisting on his going out to get a nursing-bottle. The child had been sent to the police station and the woman had been arrested. While in the cells she had become almost maniacal, but then had suddenly awakened, so to speak, and begged to be told where she was. After this there had been no abnormal symptom beyond severe headache. So far as the author could ascertain, she had not made any remark betraying any recollection of her performance during the day in question. There was nothing marked in her appearance; her memory was good, and there had been no motive for stealing the child, as she had been married only three months, and the author had ascertained by examination that she was not pregnant and never had been. The previous history of the case was extremely interesting. When three days old, the woman had had general convulsions, which had continued at frequent intervals until she was two months old, when they disappeared. At the age of two years she would eat garbage, and had been particularly partial to sawdust. She had been an extremely precocious child, and had shown a fondness for dressing up and acting, once offering her services at a neighboring theater when only four years old. Six years later she had dressed up as a servant and insisted on acting up to the part, taking her food after the family had finished, and so on. She had run away from home to get married, although there had been no opposition to the engagement. A year before coming under the author's observation her arm had been jammed in near the hinge of a door and both bones of the forearm snapped. She had experienced very little pain, and probably the arm had been anesthetic at the time. There had been no hysteroid fits, but she had frequently been emotional, and her mother had observed her as being "very hysterical." There was no history of epileptic fits, or of vertigo, or of any other thing that clearly pointed to *petit mal*. With regard to previous attacks of automatism, her husband stated that several times when he had taken her to places of amusement "her face went white like paper." On getting home she would deny that she had been out, although after a short time her recollection would return to her.

The author says that in several cases he has seen a simple one. These seemed to be of three varieties: 1. That the case concerned had been married and that the whole performance had been arranged and intended to get out of her. 2. That it had been a consequence of fracture. 3. That it had been a hysteroid phenomenon. There had been made in the past a previous attempt to remove the first automatism, and on the day of the attack she had had her forearm jammed in the door, as mentioned above. It had been her property, and she had been very much distressed by the loss of it. She had been very much distressed by the loss of it. She had been very much distressed by the loss of it.

On the other hand, there was an entire absence of motive so far as could be ascertained. Her demeanor from the time when she had come to herself in the police station, the complete oblivion of the events of the day in question, together with the general features of the case, had determined the author to report that, in his opinion, she had not been responsible at the time. The question, he said, as to whether it had been an hysterical or an epileptic phenomenon was extremely difficult to decide. There was strong evidence of hysteria in the previous history of the case, but such periods of unconsciousness in hysteria were unknown in England, so far as he knew, although cases had been described, mainly in the south of France. The positive evidence of any epileptic tendency in this patient had been slight, and had consisted chiefly of the numerous convulsions from which she had suffered in infancy. It was possible that the spells mentioned by her husband had been periods of automatism following unobserved attacks of *petit mal*. The grotesque character of her performance, the sudden awakening, and the (apparently) complete oblivion correspond closely, the author remarks, with the phenomena met with after epileptic fits. There was insufficient evidence to allow one to speak dogmatically, but the author regarded the case as one bordering on both epilepsy and hysteria, and the epileptic element as the essential factor in producing the automatism. It had been the author's intention to hypnotize the patient, but he had been prevented from doing so. This had been successfully accomplished in some cases and the account verified.

The most interesting and important case in this connection had been cited by Professor James (referred to by Dr. Hughlings Jackson). He stated that the facts had been investigated by others, among them Dr. Weir Mitchell, who had been satisfied as to the general accuracy of the account. The case was that of a clergyman who, at the age of thirty, had temporarily lost his sight and hearing, apparently from religious excitement, and had been subject to headaches and temporary fits of depression. There was no definite history of epilepsy, but he had had "several spells" of unconsciousness lasting a few minutes, which might have been of this character. In January, 1887, he had drawn some money from a bank and got into a car, and this was the last incident he remembered. He had not been heard of for two months, although advertised in the papers as missing. In March, at a place at least three hundred miles away, a man calling himself A. J. Brown, who had rented a small shop six weeks previously and stocked it with stationery, and had carried on the trade without seeming unnatural or eccentric, suddenly "woke up" in a fright and called upon the people of the house to tell him where he was. He gave his right name, and said that he was entirely ignorant of shopkeeping, and that the last thing that he remembered was entering the car. He soon proved his identity. He was very weak and exhausted. No allusion to his former life could be traced, except that he had once given an address at a prayer meeting under the name of Brown, in which he had related an incident which he had witnessed in his natural state. The two weeks, however, which had transpired between his leaving the one place and his arrival at the other had remained unaccounted for, and he was hypnotized three years later in the hope of obtaining some information on this point. In this condition he answered at once to the name of Brown. He said that he had heard of — (his correct name), but did not know that he had ever met the man, and when his wife was brought to him he said emphatically that he did not think that he had ever met the lady before. On being questioned, he at once recounted his doings in the last two weeks. He had spent an afternoon in Boston, a night in New York, and ten days in Philadelphia, first at a hotel, afterward at a boarding house. The proprietors

isted a perception between the reception of the afferent current and the emission of the efferent.

The ideomotor group includes all reflexes which are not the result of either perception or emotion, in some sense, "residual phenomena" among reflexes.

Under the heading "ideo-muscular" one would classify "volitions" if disposed to do so—a proceeding very acceptable to certain advanced psychological physiologists, says the author. To call all voluntary acts reflex, seems to lose sight of certain most radical distinctions between sets of actions, most notably between a reflex act and what might be called the corresponding voluntary imitation of it: *e. g.*, winking from a strong light is a sensori-muscular reflex; winking voluntarily is psychologically a process of a totally different kind. Again, laughing "in spite of yourself" is an emotio-muscular reflex, whereas voluntary laughing—*e. g.*, imitation of laughing—is, on the face of it, a very different act. The will naturally suggests "reflex inhibition." This is largely, but by no means entirely, voluntary.

With regard to psychico-metabolic reflexes, all vital action is metabolic, but a kind of reflex not concerned with definite glands or vessels, but having its manifestations through a wide spatial distribution, can be distinguished. It would be under the category "ideo-metabolic," says Mr. Harris, that those well-authenticated cases of hallucinations causing or curing disease would be placed. Thus there is much mystery and romance dispelled when, instead of "miraculous cure by faith-healing," we write "positive ideo-metabolic reflex!" Of course, he says, metabolic reflexes might exist in other systems than the dermal. It will be very evident, he adds, that "expression of the emotions" is largely reflex, while any imitation of an emotion—simulation of a particular expression—is a different thing psychologically; it is voluntary, to begin with. Moreover, the expression of many emotions is eminently under control; self-command does not so much consist in not experiencing certain emotions as in habitually being able to "inhibit" or control their manifestations.

Somnambulism. The *Bristol Medical-Chirurgical Journal* for June contains an article by Dr. J. Michell Clarke, of Bristol, in which he remarks that, if, without awaking a person who is dreaming, the motor centers are put in action by the illusion of the dream, the condition of somnambulism is arrived at. Somnambulist actions are of all grades, from the simplest to the most complex. The sleep-walker's energies are entirely absorbed and dominated by an extremely vivid illusion, under the influence of which his efforts are concentrated upon the accomplishment of some deed suggested by it. We must not jump to the conclusion, says the author, that, because the somnambulist need not be conscious of his acts, and even carried to bed without knowing it, touch and the other special senses are for the time being inactive. In most somnambulists the visual and tactile senses are not so completely inactive, but all the senses are dominated so that the person does not feel and is aware only when used to the condition of his senses. He may get out of bed and walk in the street, or he may go down to the river, or he may come to a river and swim across it, avoid obstacles and dangers, and do many other things, all of which, if done in reality, the consequences would be very serious. The condition is not a complete one, and the person is not unconscious of his actions, and conditions would arise and paralyze his will-power. On the other hand, he may be completely unconscious of his actions, and the condition is not a complete one, and the person is not unconscious of his actions, and conditions would arise and paralyze his will-power. On the other hand, he may be completely unconscious of his actions, and the condition is not a complete one, and the person is not unconscious of his actions, and conditions would arise and paralyze his will-power.

occur in imperfect states of somnambulism, when the perceptive centers are not fully aroused, and in which the sleep-walker walks along with his eyes closed.

The actions performed are often so complex and difficult of accomplishment, and the component muscular movements so suitably co-ordinated and adjusted thereto, that it must be concluded that their successive stages are, as a rule, realized by the sleep-walker. Sensations must reach the highest cerebral centers and be perceived, and the manner in which they are acted upon presupposes judgment and even intelligent choice. With regard to the various functions of the nervous system, the eyes may be opened or closed, generally open, and the sense of vision, as a rule, seems to be acute. Hearing may be absent or present. Touch is generally preternaturally acute. There is no doubt of the activity of the intellectual processes in somnambulism. It has been proved that children have learned their lessons while in that state, and repeated them correctly the next day. The only constant and essential sign of somnambulism, says Dr. Clarke, is the forgetfulness of all that has passed during the period of somnambulism, however complicated the actions may have been. The vivid dream, however, which preceded the somnambulist state may sometimes be recalled on waking. There is good evidence that in a return of the somnambulist condition the memory of the events that took place during previous attacks is most often preserved, although completely lost in the waking state. This is analogous to what is called induced somnambulism, a condition essentially resembling sleep-walking in its main features, which can be evoked by hypnotic suggestion. In induced as in spontaneous somnambulism, after the desired action or speech has been accomplished all further memory of it is lost; but, when the subject is subsequently hypnotized and again enters the somnambulist state, he has a more or less complete remembrance of all the events of the former somnambulism, but none of those of his normal life. He may thus have two existences—the first, or normal, and the second, or somnambulist one.

There are allied states, perhaps most often connected with epilepsy, which still more nearly approach the condition of spontaneous somnambulism. This condition is called ambulatory automatism, and it can not be recognized by any external manifestations, for the minor daily actions of life are carried on as usual, and there is nothing to betray the existence of an abnormal state. Dr. Clarke quotes the following instance from Charcot: A man who was accustomed to sell curios from house to house arrived at a customer's house at 8 p. m. on January 18th. He did not return to his carriage, and the coachman, on inquiring, found that he had left the house. From that time until January 26th there was a complete gap in the man's memory, but on the 26th he found himself on a bridge in a strange city while a military band was passing at the time which might have awakened him. Not liking to ask the name of the town, he inquired his way to the railway station, and there saw that he was at Brest. He found that his clothes were clean and well kept, and his shoes not dirty or worn, so that he could not have traveled the two hundred miles on foot, and his general condition was such that he must have had proper food and accommodation during the time. These eight days had completely dropped out of the man's life, yet his condition showed that he must have taken food and drink, slept, obtained shelter, and paid for all these things, and all the time have conducted himself like an ordinary person. The man was perfectly sane and intelligent, and showed no evidence of brain disease. The condition in this case was closely allied to somnambulism, and the author thinks that a person during sleep-walking is conscious, can see, hear, and feel, and form more or less accurate judgment from his perceptions as to the actions best

adapted to attaining the end he has in view, but on awaking completely forgets all that has passed during the somnambulism; and, although the sphere of this consciousness in the somnambulistic state is limited, there is no ground for the assumption that the actions are subconscious and take place without bringing the higher cerebral centers into activity.

In somnambulism both the lower and the highest sensory and motor centers are called into activity, but only in a limited way, with strict reference to the illusion which is being acted upon. So also in induced somnambulism the operator can put into action certain centers exclusive of all others by means of a potent suggestion. In both cases, the normal processes of association of the ordinary life being set aside for the duration of the somnambulist state, there is nothing to call up the memory of what has passed until the subject again falls into the same condition or is thrown into it.

Bromine and Bromal Hydrate.—The *Hospital* for July 14th publishes an article by Sir Benjamin Ward Richardson, of London, in which he says that the part played by bromine in therapeutics is now very extensive, and, from some points of view, unique. He remembers a time when bromine and bromides played no part in medicine, and when bromine itself belonged exclusively to the chemists' domain.

A theory was at one time started that bromine, iodine, chlorine, and oxygen were one substance presenting different conditions, probably by the molecules of the element combining with each other, as oxygen combines in the substance called ozone. The late Professor Wilson was, he thought, the originator of this theory, and said a great deal in support of it. All the three elements, chlorine, oxygen, and iodine, it is a negative electric, and in its combining proportions bromine presents features which would seem to connect it with the family of substances named. Like all these substances, too, it acts with great intensity on dead organic matter, decomposing it much in the same way as ozone does, and indeed its use as a disinfectant in infectious matter has been very loudly and properly declared by many experimenters who have employed it for this purpose. Its pungency, however, leads it to be less manageable than iodine in the sick-room, and he does not know that it is more efficient.

In the author's researches on the action of different elements on animal bodies he followed out a long series of experiments with bromine, using it in combination with water, alcohol, ether, and amyl hydrate, in all of which it is more or less soluble. In its concentrated form the vapor of bromine is an excessive irritant when inhaled. This was discovered very early by those chemists who engaged its preparation, and it was found that it would destroy in one moment infused by the mouth into fish, and would even kill all cold and warm-blooded animals. He doubts that he was afraid of its toxic properties, when which to doubt interrupted for some years its introduction into medicine. In his work he proceeded very carefully in the administration, making it to be repeated from a small quantity of life, frequent draughts, and this course may be seen to have been in large doses it acted as an irritant, in smaller doses it produced paralysis of the various functions of secretory glands, so that there were made to throw out an increased amount of secreted fluid. He found also that it produced a certain narcotic effect, not a true anæsthesia, but a somnolent (drowsy) condition, resembling that of opium. He has observed that it has a powerful effect on the heart, approaching more to that of the digitalis than of any other remedy. The history has been in 1845, when 1846, and the various cases have been which give more fully the nature of the bromine than any other remedy.

Research by the University of the Philippines, Manila, and the National Bureau of Health Statistics, Manila, has shown that the incidence of the disease is higher in the Philippines than in the United States.

substance, both in experiment and in practice, is defined. Dr. Steinmann, of Berlin, and Dr. John Dougall, of Glasgow; and their results, independently carried out, tallied most satisfactorily with his own. They were of one mind in thinking that this hydrate would in time prove a good addition to therapeutic resources.

The author's first observations led him rather to depreciate the value of bromal hydrate. The dose of it required to produce specific symptoms was much smaller than that required for the corresponding chloral compound, five grains of the bromal hydrate being equal to ten of the chloral hydrate. The symptoms that followed its administration were a kind of narcotism attended with muscular prostration, but with less insensibility than follows from chloral hydrate. It was possible with it to produce really deep anæsthesia, but this was only brought about when the dose was unusually large, and then there followed such sudden and extreme decrease of animal temperature that signs of asphyxia from condensation of water in the bronchial passages—hydrops bronchialis—were developed with fatal consequences to one or two of the inferior animals subjected to its influences. This effect was so striking that he was led to think of the use of bromal hydrate as a good remedy for the reduction of temperature in high febrile states; and if he has for convenience's sake been brought of late to use chloral hydrate preferably for the same condition, it is only as a matter of convenience, the bromal hydrate being rather difficult to procure in the pure state.

When it is obtained pure, bromal hydrate is a crystalline substance not unlike chloral hydrate, and can be administered much in the same manner, but in a smaller dose. Three to five grains of it dissolved in an ounce of water form a sufficient dose for anti-febrile purposes. It can be combined with all substances that are compatible with chloral hydrate. It can be given with chloroform water, and half a drachm of glycerin added to each dose goes well. It can also be prescribed in combination with liquor ammonii acetatis.

A point of great interest connected with the physiological action of bromal hydrate is seen in comparing its action with that of chloral hydrate. It illustrates how a difference of chemical elementary constitution and of weight modifies physiological action; how the heavier bromine in combination differs in action from chlorine in similar combination, and from the similar compounds of the heavier iodine. The science of therapeutics, as an exact science, and therefore more practical than now exists, will ultimately, says the author, rest on a full knowledge of these H.H. compounds.

Copper Salts in the Treatment of Tuberculosis.—The *Lancet* publishes a review of a work on this subject by M. Luton. It is divided into two parts. The first includes the history, medicinal uses, properties, and the action of copper salts in the tuberculous process. The part of this work dealing with the action of the metal and the action of the salts on the tuberculous process are, however, the most valuable portions. It is evident from the number of observations cited that whenever copper salts are administered in the treatment of tuberculosis they are given in the form of green vitriol, or ferrous sulphate, which is also employed by the author as a substitute for potassium iodide in the treatment of tuberculous glandular disease. The author has observed that the administration of ferrous sulphate in the treatment of tuberculous disease is not only more efficacious than potassium iodide, but also more palatable, and is therefore more readily accepted by the patient. The author also states that the administration of ferrous sulphate in the treatment of tuberculous disease is not only more efficacious than potassium iodide, but also more palatable, and is therefore more readily accepted by the patient.

procedures. In tuberculous arthritis it tends to the same results. It is an excellent adjuvant in the first stage, it is valuable in surgical therapeutics in the second, and in the third it completes what the operator has begun and prevents the disease from spreading and, at the same time, a return of the symptoms. According to Dr. Luton, copper salts may be a valuable aid in all stages of the evolution of surgical tuberculosis as well as in non-surgical forms of the disease.

The Treatment of Dislocation of the First Metacarpal Bone.—The *Gazette* correspondent of the *Journal des praticiens* remarks that this dislocation is so rare that Gérard found only twenty-six cases of it on record. It is caused directly by striking the thenar against a resisting body, and indirectly by extreme flexion of the thumb or by a blow on the extremity of the bent thumb. It is characterized by pain, deformity, shortening of the thumb, etc. M. Trouillet, who has recently met with a case, has made a study of the details of the treatment. Reduction, he says, is generally easy, but the dislocation tends to be reproduced on the most insignificant movement; hence the necessity of immobilizing the thumb. The question is, In what posture shall it be immobilized? Some advise immobilizing it in adduction, others in abduction, and still others, like M. Ollier, in a position intermediate between the two. M. Trouillet's opinion is that abduction should be selected. As a means of immobilization he recommends a plaster-of-Paris or silicated splint, strengthened with a piece of gutta serena or a piece of zinc wrapped with cotton. The apparatus should be kept on for a fortnight, and then the treatment is concluded with a few applications of massage.

The Treatment of Open Fractures.—The *Journal of the American Medical Association* for July 21st contains a paper on this subject by its editor, Dr. John B. Hamilton, read by title in the Section in Surgery and Anatomy at the recent meeting of the association.

The aseptic treatment of an open fracture, says Dr. Hamilton, requires first the thorough cleansing of the limb and the wound. The limb should be shaved and washed clean. Irrigation with boiled water is the best means of securing cleanliness of the wound. If there should be venous oozing, it should be stanchied with hot water, or the wound irrigated with a bichloride-of-mercury solution, 1 to 4,000. The styptic effect of this solution is at once seen in the bleaching and drying effect produced. Any spurring vessel should be tied with carefully sterilized catgut. The next step is to secure accurate coaptation of the fragments. Sharp spicules should be removed, but broad fragments; even when considerably comminuted, should be re-adjusted. The elevator and the heavy bone forceps will frequently be needed to bring the fragments into position. It is well known that the principal causes of non-union, outside of constitutional causes, are: 1, want of apposition; 2, interposition of tissue; 3, excessive motion. Hygienic care should be taken. The diet, to prevent the disease of nutrition.

Thorough cleansing of the fragments is one of the most important indications. This should be accomplished by perfect asepsis, or, at least, by the use of the most reliable antiseptics. The use of the many antiseptics, and even the use of the first, for example, by the personnel in the treatment of open fractures, is a common mistake. When a patient is injured, and a qualified surgeon of this class is called to attend the patient, he should first of all, if possible, bring the fragments together. If not, he should use such antiseptics as the fragments are to be treated with, for the purpose of securing the wound edges may be secured, after which a very copious irrigation of the wound with antiseptic solution should be made. From this time, when the fragments have been adjusted to the wound, the patient should be kept in bed, and the wound should be dressed with a sterile dressing, but generally a moist dressing

hole must be made to enable the wire to pass. The wires must, after twisting, be left long and project from the wound so as to facilitate easy removal.

He has had no experience with the use of bone dowel plug placed in the medullary canal to secure fixation. It has seemed to him so liable to be septic, and there must be so many practical difficulties in the way of final removal, as to make it a dangerous appliance.

In five cases he has used the bone ring introduced to the notice of the profession by Professor Senn. In every case there was suppuration, and he has abandoned it until such time as we shall be enabled to sterilize the ring. It is yet so far from perfection in that regard as to make it almost certain that the wound will become infected. The principle yet may be made useful by the invention of some different material. The bone ring (or thimble) has one advantage, that is the great amount of exudate (forming callus) which is excited by its presence. So pronounced is this effect that in cases of ununited fracture, where there is no attempt at the formation of callus, the ring may be used to advantage notwithstanding its general lack of sterilization.

The condition of the soft parts must next be looked to. Indeed, it is a matter which is scarcely secondary to the proper treatment of the fractured bone. Wounded tendons, torn muscular structures, and lacerated nerves should be sutured according to the rules laid down for the respective tissue involved. Stout chromicized catgut will be found useful for tendons, and fine flexible catgut for nerves. In case the distal and proximal ends of a nerve or tendon can not be brought together, they may be sewed to the nearest adjoining nerve or tendon. All this takes time, but it will be well spent. When the wound is cleansed the bones are brought together, and the soft structures thus attended to; then irrigation is again practiced and the external wound closed by sutures of silkworm gut. Extension is usually not necessary if the fragments have been brought into perfect apposition, and there is much difficulty in retaining them. External support should be secured by a plaster-of-Paris bandage, and when necessary a fenestra cut opposite the wound.

Cancerine.—This name is given by M. A. B. Griffiths, in a communication lately made to the *Paris Académie des sciences*, a report of which appears in the *Mercredi médical* for July 4th, to a ptomaine which he has extracted from the urine of women affected with cancer of the uterus. He describes it as a white substance crystallizing in microscopic needles, soluble in water, and having an alkaline reaction. It forms a platinichloride, an aureochloride, and a hydrochloride. It gives a yellow precipitate with phosphotungstic acid, a brownish one with phosphomolybdic acid, and a red one with nitrate of silver. Mercuric chloride forms with it a gray precipitate, and Nessler's reagent gives a brownish one. Its formula is $C_8H_8NO_2$. It is very poisonous, producing fever and leading to death in three hours. It is not met with in normal urine, but is formed in the system in the course of uterine cancer.

Brewer's Yeast as a Remedy for Boils.—The *Lyon médical* for July 29th condenses from the *Repetoire de pharmacie* for July 19th some remarks by Dr. Debonzy on this well known remedy for boils. The amount to be taken, he says, is from two to three tablespoonfuls in twenty-four hours, mixed with beer and taken before eating. This treatment is said to cure carbuncles pretty promptly, in cases of repeated crops of boils it may happen that new boils appear, but they abort. In cases of these successive attacks of boils the treatment should be prolonged for a fortnight. The only inconvenience arising from the use of the yeast is diarrhoea, and this is not often produced.

Lectures and Addresses.

THE PRESIDENT'S ADDRESS

DELIVERED BEFORE THE AMERICAN LARYNGOLOGICAL ASSOCIATION
AT ITS SIXTIETH ANNUAL CONGRESS.

BY D. BRYSON DELAVAN, M. D.

FELLOWS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION: In opening our sixteenth annual congress, let me heartily welcome you to what gives every promise of being a most useful and enjoyable meeting. The support which you have given it, both by your presence and by the scientific contributions provided, has been spirited and generous, and I am assured that you will still further co-operate with me in carrying it through to a harmonious and successful close.

As president, the option is accorded me of inaugurating our exercises with the time-honored ceremony of a presidential address. While some have held the value of this in question, I believe that such an address should be considered, in like manner with our annual dinner, as a very desirable, if not an indispensable, part of each yearly gathering, affording as it does an opportunity to call attention to ideas and suggestions of timely interest which could hardly otherwise be presented, and to record and study events of historic value in the career of the association.

Surely the experience gained in sixteen years should give light enough to illuminate for us the present and enable us to look forward somewhat into the future. In trying to forecast the future, too, it is eminently right that we should indulge in retrospect, particularly for the benefit of any who may but recently have come among us and to whom our early history may be unknown. I shall aim, therefore, to go backward with you over the life of the association, review the means by which it has attained its ends, estimate fairly its present standing, and, finally, study the methods by which its mission of usefulness for the future may be most surely and successfully accomplished. In doing this I trust that our older members may be stimulated by the story of their success, and our younger ones made to realize the full meaning and value of their admission into what has rightly become to its followers an honored and cherished institution.

The history of our association is almost the history of laryngology, not only in this country, but in the world, for Manuel Garcia, the discoverer of the laryngoscope, is still living and one of our foremost members, while the list of our corresponding fellows has contained the names of the most distinguished specialists of the time. It must always be a source of regret that Thomas Green, our third distinguished countryman, should have failed to avail himself of the opportunity to come into existence. As the power of scientific illustration at the time, he might have proved that he led the world, and a path indeed too rough and thorny by those who should have gone before him. Between the dark age in which he lived and the brilliant era ushered in by Czermak, how great a waste!

Then, blind groping after truth; now, learning guided by the electric light of modern scientific methods. Then, ignorance, opposition, misrepresentation; now, an acknowledged department of science, recognized and honored wherever known. Then, practically in the grasp of one man; now, universal. Truly, our earliest motto was well chosen—" *E tenebris lux.*"

According to Elsberg, the laryngoscope was first introduced into this country in 1860. By 1878 its use was being taught in twenty five different institutions, and the specialty had gained a position of acknowledged respectability. Elsberg, eminently qualified for such a task, has given a complete history of the study of disease of the throat in this country, which those who own the first volume of our *Transactions* will find a most interesting record. In the same essay also he pointed out the rare possibilities of usefulness which lay in the path of our then youthful association, the birth of which had taken place but a year before. Concerning this happy event, let me refresh your memories by recalling the fact that the inaugural meeting of the American Laryngological Association was held in Buffalo on the 3d of June, 1878, in response to an invitation by Dr. Frank H. Davis, of Chicago, issued on May 10, 1878, to the following-named gentlemen: Dr. J. Solis-Cohen, Dr. Carl Seiler, Philadelphia; Dr. Clinton Wagner, Dr. George M. Lefferts, Dr. Louis Elsberg, Dr. Beverley Robinson, New York; Dr. Frank Donaldson, Dr. J. H. Hartman, Dr. Samuel Johnston, Baltimore; Dr. Frederick I. Knight, Dr. E. Cutter, Boston; Dr. E. L. Shurly, Detroit; Dr. William C. Glasgow, Dr. William Porter, Dr. Thomas F. Rumbold, St. Louis; Dr. Hosmer A. Johnson, Dr. E. Fletcher Ingals, Dr. M. Monnheim, Chicago. These gentlemen, together with Dr. Rufus P. Lincoln and Dr. F. H. Bosworth, of New York, met together, as above stated, for the purpose of forming a national association for the advancement of laryngology. Very justly, therefore, they should be considered the founders of this organization. From the minutes of this first meeting we learn that it was called to order by Dr. Lefferts, who acted as secretary, and that Dr. F. H. Davis occupied the chair. Dr. Louis Elsberg, in his inaugural remarks as first president, re-echoed the experience of Horace Green when, in speaking of his own twenty years of special labor, he said: "The road has been a rugged one, and few of you can realize to-day the uphill work, the obstacles, and obloquy encountered." And then, in the spirit of the true enthusiast that he was, he quickly adds: "In the pursuit of our specialty I have found much happiness, reward for all endeavor, satisfaction from contributions received, and such other gratitudes from patients, recognition from the profession, and altogether gratifications, perhaps, than I have dreamed of. It was said that Holbrooke told me from Birmingham that Sir Graham Halliday thought that the laryngologist's game is the best game in the world, and the physician's game is the worst."

Their lives were associated with a type of men who would argue ill for any serious departure that might in future be made from them.

The author wishes to thank the referee for the following comments:

of our society were eminently philanthropic, noble, and ambitious. No one can question that these were exemplified so clearly and forcibly by the four distinguished men who first presided over us that we need never think of failure as long as the ideas which they advanced continue to be kept in view. Their organization of the society was a preconceived movement in the direction of a higher and broader education; an intelligent, vigorous effort to advance and disseminate the knowledge of our special work. By means of its annual meetings, by the publication of its transactions, by the encouragement of the special literature of our department, both scientific and critical, by the bringing forward of youthful aspirants for laryngological fame, and, finally, by the study and practice of the best methods of instruction in our medical schools, it was hoped that the association might attain usefulness in no ordinary degree. How well these hopes have been realized will shortly appear.

Never since its formation has the association failed to hold its regular annual congress at the time and place formally agreed upon. Its meetings invariably have been well attended, both by its older and younger members. Every year new contributions, often of great scientific value, have been presented. The discussions have been remarkably full, original, and helpful. Indeed, if there is one thing to which we can point with just pride, it is the tangible essence of these meetings represented by our published *Transactions*. Fifteen volumes, models of excellence in all that goes to make a perfect book, each one in itself sufficient to form a most worthy monument to the genius, the devotion, and the progressive spirit of the society, have gradually accumulated upon our shelves. According to the published records and to the programme now before us, original articles have been contributed since the beginning of the society to the number of more than three hundred and thirty, a large proportion of which have been of unusual value. Comparing these papers with the best that the world has produced, they will be found to be scholarly, accurate, and exhaustive, while, scientifically speaking, many of them are historic, marking, as they do, the original discovery of important scientific facts, and in some instances inaugurating new eras in the departments of which they treat. The foreign relations of the association have always been intimate and agreeable, and there has never been a congress of any note in which it has not been able to represent.

Our association is infinitely indebted also to another important educational body. In the department of journalism its library has been generously associated with the progress of the special literature of our department. As showing the extent of this association, all of the, with the exception of the literature of the department of the *Medical and Surgical Literature*, that is to say, the *Transactions*, of the *Archives of Laryngology*, the *Journal of Laryngology*, and *Les annales des maladies de l'oreille, du nez, et de la gorge*, founded in Paris by Lombard, Richer, and Lachapelle, past twenty years ago, have been started since 1872.

A glance at these reveal an array of occupations which represent every language, and which, as literary articles and scientific studies, are devoted to laryngology. These

journals may be divided into two classes: those which devote themselves especially or in part to the publication of original matter, and those which merely pretend to give a critical synopsis of the current literature of the specialty. Of the journals of the first class, none has played a more important part or attained a higher plane of excellence than did the *Archives of Laryngology*, founded in 1878 by our fellow-members, Dr. Knight, Dr. Cohen, Dr. Elsberg, and Dr. Lefferts, and by them so conducted as to have made the magazine a model guide for the future management of such enterprises. One valuable feature of it may have escaped your attention—namely, its biographical records, which form an important link in the following chain:

As a part of his inaugural address, the late Dr. Elsberg presented to this society a complete bibliography of laryngology up to the year 1878. The work of recording the current literature of the day had already been undertaken by Lefferts, who, beginning in 1875, published quarterly in the *New York Medical Journal* a carefully-prepared digest and complete bibliography of the subject, and transferred his reports to the *Archives of Laryngology* when that journal was started in 1880. Here they were continued, to be taken up and carried onward by other magazines, now easily accessible to all, up to the present time. To Dr. Lefferts, therefore, belongs pre-eminently the credit of this most helpful contribution, which, long antedating the *Index Medicus*, will be appreciated by every one of us who attempts to study or to write in this department, and which, combined with the bibliography given in the work of Sir Morell Mackenzie, presents the completest available record of the special literature of our subject.

Of the journals now in existence, that which is the oldest still continues to be one of the foremost and best, and the editors of the *Les annales* may look with well-earned satisfaction upon the twenty splendid volumes with which their labors have been rewarded. No journal since the death of the *Archives* has filled more acceptably a place of higher usefulness than the present *Journal of Laryngology*, founded by Sir Morell Mackenzie, and a worthy monument to him. By the English-speaking contingent, who are able to appreciate its value and compare it with others of its kind, it will easily be accorded the highest rank.

Turning from the department of journalism to that of book making, what changes have taken place with us since the days of Beunati and Horace Green! While a literature of extraordinary proportions has been steadily accumulating in this country, it may at present be said that the standard literature of laryngology began with Solis-Cohen in 1879 and ended with Bosworth in 1892.

Last and best of all, the influence of the association upon its active fellows has been stimulating and salutary. All will readily admit this, while there are some among us to whom it has been a veritable inspiration.

Thus the American Laryngological Association, completely successful from its inception, has steadily advanced upon the even tenor of its way, each year adding to its usefulness, its influence, and its reputation.

Meanwhile, as compared with ours, what has been the progress of the outside world in this direction? The story

of foreign national associations is briefly told. While there are various local societies and sections of laryngology, national associations have, until very lately, been unknown; now, however, their value is beginning to be recognized. First in the order of priority is the British Laryngological and Rhinological Association, founded in 1888 by that greatest of laryngologists, Sir Morell Mackenzie, ten years after the first meeting of our association. In 1890 successful associations were begun in France and in Belgium, in 1892 one in Italy, and, most recent of all, the Laryngological Association of Holland was started in 1893 with an active membership of twenty-five. Scandinavia, Russia, Germany, Austria, and Spain are as yet unrepresented. The American Laryngological Association, therefore, is nearly as old as all other similar associations combined. The fact that others are following its example proves that the ideas it has implanted, although slow in being accepted, are at last beginning to bear fruit.

But while upon the subject of such organized work in laryngology, it would not be fair to pass without notice the numerous local societies and special sections of large general medical bodies which have been formed for the advancement of our specialty. Indeed, here again America may claim priority, for five years before our national association was started there was organized, at the suggestion of Dr. Clinton Wagner, the Laryngological Society of New York. The story of its founding is worthy of your hearing, as it bears directly upon the subject of our discourse. It is herewith given in the words of Dr. Wagner himself:

"In the autumn of 1873, appreciating the advantage to be derived from a society for the consideration of laryngological work, I wrote to a number of men, many of whom had studied diseases of the throat in Vienna and elsewhere and who held positions at throat clinics in this city, requesting them to meet at my residence for the purpose of organizing such a society. Early in October, 1873, I met on Sunday the exact date the following responded to the invitation: Dr. G. M. Lefferts, Dr. Woolsey Johnson, Dr. Charles McBurney, Dr. F. H. Bosworth, Dr. M. J. Asch, Dr. M. D. Mann, Dr. F. P. Kinnicutt, and Dr. H. Bridge. The New York Laryngological Society was then organized, having for its object the 'promotion of the study of diseases of the larynx, pharynx, and adjacent parts.'

Dr. McBurney and I were appointed to draw up the Bulletin. A large number of new members were shortly afterward admitted. The society flourished until the American Laryngological Association appeared, and then, when the Laryngological Section of the New York Academy of Medicine was established, it was merged into it.

It was the first society devoted exclusively to laryngology and rhinology established either in this country or in Europe. At Buffalo, in June, 1878, four members of the New York Laryngological Society—viz., Lefferts, Bosworth, Johnson, and myself—took part in founding the American Laryngological Association; we were the only New Yorkers present.

"In the obituary notice of my friend, Dr. Elsborg, which appeared in the New York *Medical Record*, it was stated:

that he had founded the New York Laryngological Society. I am quite sure that Elsborg never said anything to create such an impression.

"As a matter of fact, Dr. Elsborg did not join the society until 1875 or 1876—I think the latter date.

"I have not written this to detract in any way from the well-earned laurels of my friend Elsborg, and at the time of the publication of the notice I, of course, said nothing. I furnish the information now at your request to aid you in putting facts on 'permanent record.'

"Very truly yours, CLINTON WAGNER."

The Section in Laryngology and Rhinology of the New York Academy of Medicine now numbers more than sixty active members, its monthly meetings are fully attended, and its scientific work is of a high order.

Within the last few years a great change has come about. All over Europe signs of increased interest have become manifest in the rapid increase of these special societies. Thus highly successful local societies have been started in London, Berlin, and other centers. The latest report is that one has been formed in Budapest. Existing national societies and the special laryngological sections of general bodies, such as the Laryngological Section of the British Medical Association, the Laryngo-rhinological Section of the German *Naturforscherversammlung*, and the Laryngological Section of the American Medical Association, are all progressively more active; new societies, sections, and associations are rapidly being formed, and everywhere a spirit of progress is showing itself most gratifying to such as have the advancement of science truly at heart.

The effect of centralized effort of that healthful competition which is the inevitable and invaluable result of the free intercourse and friendly rivalry made possible by these societies has nowhere shown its influence more potently or with more gratifying results than in England, where lately the study of laryngology has been advanced with the energy and enthusiasm of a genuine renaissance. Wherever successful associations have been established, their influence has been invariably elevating and inspiring, as shown in the improved quality and quantity of the scientific work done and in the general tendency toward the attainment of higher planes of professional education and culture.

It is indeed a satisfaction that this strong onward movement should have found leaders, and it is a great pleasure to realize that, by their society, and it is society that requires this that we should secure recognition from the medical parents. In the midst of these self-congratulations, however, let us not forget to thank the friends who have helped us.

For from among these friends the highest laurels let us remember that the success attained, the honorable place fairly and honorably won, the flattery of delayed but sure and happy recognition—all these are the result of the weightier obligation. To be an example to the world, to contribute to the progress of the science, to hold the place which has been won, it must be through increased diligence in our own work, just as we are doing every day in the line of others.

Thus, then, suggested a few points in the history of the association for its study and if possible, also for its

its most important function in the past and wherein lie its greatest possibilities of usefulness for the future. Unquestionably, the keynote of the whole matter was struck by our first secretary when he selected as the motto for our programme the words "*Docendo discimus*"—By teaching we learn. If the association is to attain and to maintain the highest place, it must itself be the exemplar and the guide; and, first qualifying itself by absolute purity of purpose, oneness of aim, and actual scientific superiority, then proceed to study and to carry out such plans for the advancement of the specialty as shall place the greatest amount of sound learning in the hands of the largest number of well-qualified men. The question of education, in other words, is vastly the most important, the most interesting, and the most opportune by which our attention could possibly be engaged. In it lies the hope of the future, both as to our own reputations and, what is of far more importance, as to the beneficent ends to which we fondly hope that our specialty may attain. This, in the origin of our association, was its grand, primal idea, inculcated first and last by the ablest and wisest of its founders, and interwoven by them into its very existence and being. Does one doubt this, let him read the enthusiastic addresses of our first president, Dr. Elsberg, the admirable thesis upon this very topic by our second president, Dr. Knight, and the more recent remarks of Dr. Glasgow; let him consider the unflinching enthusiasm, both in precept and example, of such men as Cohen, Lefferts, Shurly, French, Ingals, Mackenzie, and others of our older members, and he will see the truth more clearly than words of mine can tell it. Teaching has been and always will be the society's most important office. It is, in very truth, a teacher of teachers, and as such should not alone confine itself to the advancement of laryngological science through the influence which it has had upon the establishment of other societies, the fostering of good journalism, and the encouragement of original scientific work. The science of pedagogy, in so far as it relates to our own department, is a topic which should engage our most serious attention. The very fact that the leading teachers of the country are our fellow-members imposes upon the association an obligation to the profession at large which can not be underrated, still less set aside.

Starting, then, with the excellent beginnings made by the writers already mentioned, it is not strange that undergraduate training has not been marked with a high degree of perfection. Indeed, the plan of instruction, the equipment, and the general discipline of at least one of our leading universities is one of decided superiority and stands unrivaled whether at home or abroad. Other schools in many different parts of the United States are doing good work. The question of the instruction of the undergraduate in this important department has, indeed, been long fully considered and seriously met.

All the progress at home, however, new and strange as it seems, has not entered in, and within ten years there had been transplanted in this country several of the most significant and wonderful advances that the history of medicine has witnessed. The failure of the middle-grade medical school to answer all of the needs of the higher

medical education has been acknowledged and a new era has been ushered in by the establishment of institutions for the special instruction of graduates.

This movement, together with the vast increase in the literature of the department, has given to laryngology an almost startling popularity. All over the country the extension of laryngology, or, more correctly speaking, the multiplication of the number of practitioners who assume to treat diseases of the throat, has been enormous and has called loudly for increased and improved facilities for instruction. This want, so urgent and at the same time so creditable, has been met by the system of the graduate school. Beginning in New York, the value of the work has been speedily appreciated by the whole country, and not only are the original schools crowded with students from all over the continent, but in many other cities similar institutions have been established, until to-day Boston, Philadelphia, Baltimore, Cincinnati, Chicago, St. Louis, and San Francisco are provided for and new ones are springing up all over the country. Those of us who have been for years personally engaged in this most interesting field of labor have realized the intense zeal and devotion shown by our pupils, who, representing every section of our country, every possible grade of intelligence and education, and every conceivable variety of personal need, have come to us for such instruction as we, on the one hand, have been able to give them, and as they themselves, on the other hand, have been able to receive.

Dealing with such men, the problem of their education becomes to us the most important one of the day. The undergraduate question is much more easily solved, as between him and the graduate the case in our department is very different, undergraduates being, as a class, of about the same age, general training, and advancement in their medical education, and each individual requiring about the same courses of instruction to introduce him fairly to our science. With the graduate student, as has already been suggested, the case is very different, in that a vastly greater variety of personal needs must be met.

To satisfy the diversified necessities of these students imposes upon the graduate director a weighty task. The theory of graduate instruction in this country is an established and triumphant success. The popularity of the demand for it is beyond question. How, then, can we best attain the practical ends required by it? How can we best infuse the ferment of sound learning into this unleavened but well promising mass?

If called upon to name the most important factors in the improvement of graduate instruction, the unhesitating answer would be—

- I. A higher and more thorough general medical education on the part of the student.
- II. The most careful selection in the choice of instructors.
- III. A modification of the best undergraduate methods, to suit the needs of the older men.
- IV. The more general recognition of the value of graduate schools to the physician, and hence to the public at large, and of the importance of so endowing them that

they may be able to perform the most extensive and efficient service to their pupils with the least amount of difficulty to their instructors.

The second consideration mentioned above is one of great importance, and we should endeavor to fill each teaching position under us with men who are both able and willing to acquire the necessary preparation and then to teach for teaching's sake—for the advancement of sound learning rather than for that of self.

As to the student himself, he must be impressed with the real gravity of the task which he has undertaken. It is unfair to allow him to believe that he can learn the whole subject in a short course of study, or to underrate to him the difficulties of special operations. In short, he must have placed before him, truthfully and fairly, as well the difficulties of our work as its successes. He must know that before he can be a surgeon he must be an anatomist, and before a special surgeon, at least a fairly qualified general one. He must be taught not alone from the book, but from the living experience of skilled, well-grounded, wise instructors, who, under the general guidance of the chief professor, shall start him upon the right path and lead him as far as his time and his capabilities will permit him to go. And, last of all, when he has read his books, learned the use of his instruments, and attended for as long as possible the daily clinic of some good man, he must realize that to the attainment of the highest skill he must devote the unremitting labor of years. Thus may be fulfilled to the utmost what has been defined as the vocation of the specialist—namely, to make discoveries and then to give them to the world. In no department has this already been done more loyally or at greater personal sacrifice than in laryngology.

Ever mindful of its obligation to the world at large, may it never happen that our association shall fail to hold in remembrance its duty to itself. While its future is full of promise, it is also not devoid of possible dangers. Lack of interest on the part of the older members, the multiplication of other societies, and, finally, those two elements which are the greatest bane of association work, namely, the introduction of society politics and the inordinate desire for self-aggrandizement—pecuniary and social—all of these may hover over the future of any organization, ready to confront it with deadly peril.

As to our founders, their lively interest in all that pertains to our success eloquently proves that their loyalty is as strong to-day as was their faith in '78.

With regard to the multiplication of special sections and societies, the more good ones we can have, the better. Than through them there is no surer way to stimulate interest and advance learning. To them we must look for the development of our own future members. The national association has thus far really maintained the better place; they will continue as long as we insist upon securing our new fellow-members none but men of high principle and liberal education, who will fully appreciate the aims of the association and contribute to it their best work. Indeed, the recognition of merit and the encouragement of the best young element have, from the very first, been

sisted upon by the society quite as emphatically as the suppression of charlatanism or the unmasking of pretense. As to the last-named evils, the surest guarantee for the future will be adherence to the high principles which have actuated the past.

And now a word as to ourselves, and I close. Since this society was formed, laryngology has undergone a revolution. Then it was in the hands of a few men, who, under the stimulating influence of the earliest enthusiasts, formed a veritable aristocracy of learning. All this has been changed; where lately our association represented not only the best but the most of laryngology in this country, its devotees may now be numbered by thousands. A spirit of liberality has been among us, a veritable socialism of science, which, having acquired a rich and rare possession, seeks not to hoard it for itself but to spread it broadcast and with lavish hand to the remotest corners of the world. True, such leveling can not take place without danger of loss. If in this vast extension of knowledge our standards of excellence are to be lowered, and work, not of the worthiest, accepted at equal value with the best, the results will be disastrous to humanity and to the true advance of science. Such a calamity, however, I am unable to foresee. The outside competition which is crowding in upon us will only stimulate to higher attainment and greater skill, while from this vast body of new aspirants must arise men who will carry still farther upward and forward the light of truth for the illumination of those hidden mysteries which it has not as yet been our good fortune to see revealed. With the progress of the present day this society is responsible in no ordinary degree. Nurtured by ardent toil, enthusiastic interest, and no little self-sacrifice, the fate of the American Laryngological Association is in your hands. See to it that the future shall secure, so far as in you lies, the rich fulfillment of the hopes of those who gave it to you.

It is wrong that your patience should be longer trespassed upon. What has been said, although so imperfectly, may, I hope, be of interest and help to some. It implies congratulations to you for the association's successful past, with ardent hope and abiding faith for its ever brighter and increasingly prosperous career in time to come.

Trichophytosis in the Domestic Fowl.—At a recent meeting of the *Société française de dermatologie et de syphiligraphie*, a report of which appears in the *Médecine moderne* for July 1894, M. Sabouraud presented the head and neck of a chicken affected with trichophytosis, which had been sent to him by M. Miradin. The feathers had been entirely absent from the affected parts, leaving naked mottled skin. A specimen of the same was shown, which the speaker examined in detail. The pathological variety of trichophytosis was the one giving rise to numerous lesions, which during the previous two years the speaker had met with three times in the human hand. Each time the state was caused by the patient had passed to the origin of the disease, which he still saw the latter had never been able to cure it. He considered it probable that the variety of *Microsporum* trichophyton, a parasite on birds, etc., sometimes produces lesions from the same origin and from the same cause, and would also admit that they had been kept for several months and had been carefully observed.

Original Communications.

ON SOME PATHOLOGICAL CONDITIONS OF
THE HEART IN DIABETES.

AND THEIR RELATIONS TO DIABETIC COMA.*

BY LEONARD WEBER, M.D.

I HAVE had under observation and treatment between fifty and sixty cases of diabetes mellitus, and kept a clinical history of most of them; the far greater number of them were private, about half a dozen only being hospital cases. As to sex, they are pretty evenly divided among men and women, who were generally over forty-five years of age when I first saw them, though the disease antedated the beginning of my own observation of most of the cases by two or more years. Four only concerned persons between twenty and thirty years of age, one of whom, a merchant, the son of a physician who died of diabetes, had all the symptoms of true diabetes fourteen years ago, but the disease became latent after a while. The man regained his health and is now apparently well, though I do not know whether his urine is free of sugar at the present time or not. And two cases in children, both girls, between eight and twelve years of age; one of them was attacked with diabetes after severe scarlatina, and died within three months under the symptoms of phthisis tuberculosa acutissima; in the other the disease came on a few months after acute bromism, caused by taking an ounce or more of bromide of potassium within thirty-six hours. In this girl's case interstitial nephritis developed pretty early in the course of the disease, progressing rapidly to a fatal termination, and she died about eighteen months after the commencement of her trouble, both kidneys being found reduced to the size of horse-chestnuts. A history of the last two cases was published by me in the *American Journal of Obstetrics and Diseases of Women and Children* some years ago. Of the forty odd cases of diabetes in advanced life, none of them got well, though I have known many of them to exist comfortably and be able to pursue business by living up to certain rules and regulations suitable to their individualities for a number of years—some as long as twenty, and quite a number for about ten years after I first saw them—and seven cases of diabetes I count among my office clientele at the present time.

Among the causes of death I have noted intercurrent and consecutive diseases, such as pneumonia, prostatica, and nephritis particularly, but at least half the number died of acute or subacute diabetic coma. Of the seven cases yet under observation, one presents an anomalous history:

Mrs. B., sixty-four years of age, married, mother of one child, had for the first time diabetes after the age of fifty, and had been under my observation for about two years. She had been in good health for many years, and had been in the habit of taking a little more than the ordinary amount of food, and was in the habit of taking a little more than the ordinary amount of exercise. Her diabetes was not accompanied by any of the usual symptoms of the disease, and she had no other disease excepting the diabetes itself, which was

and remained closed these many years. At least fifteen years ago he began with albuminuria, and has passed albumin in pretty large quantities ever since. Two years ago, in summer, he was taken ill with some gastric disturbance and slight fever, and presently began to drink more water than usual, lose in weight, and to show two per cent. of sugar in his urine. The presence of sugar is not as yet permanent in his case, but it frequently appears, and three months ago the man's old fistula broke open again and discharged some thin pus.

This development of glycosuria in the progress of renal albuminuria is not an isolated observation in modern medical literature, but it is the first case of the kind that has occurred in my practice.

Now, in coming to the subject of my paper—the state of the heart in diabetes and its relation to diabetic coma—it is well known to me that Frerichs already drew attention to it, and there are, besides, some recent papers out concerning the matter, especially one by Jacques Meyer, of Carlsbad, also by others I believe. I have not had the opportunity to read any of these, neither have I collected any special literature to present to you, but simply bring before you my own observations made at the bedside, and ask you to compare them in the ensuing discussion with your own. After attending about half a dozen diabetics who died in coma I had to notice that there were marked differences as to the premonitory symptoms, to the manner of the onslaught or development, and to duration, the termination being fatal in every well-marked case. The difference in kind and degree of coma appears to depend upon the relative potency of the factors that are mainly active in bringing it about.

Where the heart has grown weary, dilated, or its muscle diseased—often so when consecutive Bright's disease or arterial sclerosis is present in diabetes—collapse coma may take place without any of the symptoms of acid intoxication of the blood by diacetic and acetone acids, usually made noticeable by the well-marked acetone odor of the patient's breath. I have seen three cases of this kind not accompanied by much temperature or other symptoms of intoxication, but simply syncope followed by speedy cardiac death. This cardiac form of diabetic coma is certainly not as frequent as the other caused by acid intoxication, but heart disease in consequence of diabetes is not as rare as might be thought, and surely potent enough in itself to cause sudden death.

The last case of the kind I observed in an old lady who had had diabetes for at least fifteen years of her life to my own knowledge, and who died a few months ago seventy-three years old. During the last three years of the disease her heart showed increasing weakness and disturbed innervation, her pulse being never more than 24 to 26 a minute, and sometimes as low as 16 to 18. Symptoms of acid intoxication she had scarcely any, and finally there was just a little rise of temperature, a little more tenderness and irregularity of the pulse, and she passed away remaining conscious almost to the last.

Her husband, on the contrary, who had always been well and active up to his seventy-second year, had acute diabetes all of a sudden, with six to eight per cent. of sugar in his urine sometimes, and presented the well-marked symptoms of acetone poisoning prior to an acute attack of bronchitis, became comatose

* Read before the American Ophthalmological Society at the meeting of the Congress of American Physicians and Surgeons in Washington, May 28, 1902.

tose, and remained more or less unconscious for a week until he died at the age of seventy-four. His heart never gave rise to any symptoms.

The causes of neuromuscular disease of the cardiac organ in diabetes are manifold, I believe. We have in the first place the wear and tear of the heart by a generally long disease producing functional weakness and predisposing it to dilatation and atrophy, fatty overgrowth, and later on, perhaps, fatty degeneration in the diabetes of fat persons, the poisonous effects of acetone and diacetic acid upon cardiac nerve and muscle, besides the poisonous effects of ptomaines produced by the putrefactive processes in the alimentary canal in course of the rather frequent attacks of gastro-intestinal dyspepsia of diabetic patients. Also concomitant or consecutive disease in the form of nephritis and arterial sclerosis plays no small part in affecting the heart and changing a previously fairly good prognosis as to further duration of life at once to a serious or grave one. Is not in chronic nephritis also the state and nutrition and functional activity of the heart of the utmost importance with regard to the management and prognosis of the case? I know it to be so, and have had occasion to speak upon this point in a paper *On the Value of Creosote in the Treatment of Surgical Kidney*, read elsewhere and published in the *Medical Record*, December, 1893. To take care of the diabetic's heart seems to me, after my experience, just as important as to pay attention to his dietary and keep his alimentary canal clean and wholesome, to prevent intoxication of the blood by acids and ptomaines with its baneful symptoms, and ward off the dreaded coma as long as may be. Fortunately for the patient, the indications for the one condition are not contraindications for the other, if properly understood. And this brings me to the prophylaxis of diabetic coma and treatment of diabetes by proper management of the diabetic patient, of which permit me to speak briefly before closing my paper. The course of diabetes in the majority of cases is chronic, but it may also be acute, even very acute. The transition from the one to the other stage has been verified in numberless observations; but, unfortunately, our position in the judgment of the progress of a given case that we undertake to treat is not so certain as it might be presumed to be, because it is so difficult to correctly understand the individual. The action and amount of power of resistance of the various organs and the entire system. Warren, in a recent paper *On the Treatment of Slowly Progressive Diabetes*, read before the Academy of Medicine, maintains that none of the prevalent theories on the pathogenesis of diabetes are fully verified by clinical observation, and that it might be called a personal, protoplasmic disease which can be brought about by the most varied causes.

I am prepared to endorse Warren's statement, although I have among my cases many where this or that organ seemed to be particularly affected, as, for instance, dilatation with atrophic hypertrophy followed by aneurysm of the hepatic artery, a case of malignant disease of the prostate with and two others without glycosuria, three cases and incomplete ataxia with well marked diabetic neuropathy, a case of severe constitutional epilepsy in the course

of which acute diabetes developed, and some cases in which there seemed to me a causal connection between arterial sclerosis and diabetes. I could not pronounce this case the hepatogenic, that the neurogenic, and that the pancreatogenic form of diabetes, because neither of them would give satisfaction when I had taken into consideration all the other constitutional symptoms of the patients.

If this is granted, our task will be to treat the diabetic individual prophylactically by taking care of his heart and his alimentary canal, to save him from coma, and directly by reducing his glycosuria as much as possible. It is some years since I first observed that one or another of my diabetic patients who had an already weak heart or was prone to attacks of gastro-intestinal dyspepsia was made worse apparently by continuance of a strict nitrogenous diet, and that after getting better of what might be called an attack of latent coma by appropriate treatment, got along better by allowing an amount of carbohydrates just sufficient for his individual requirements, yet not so large as to increase the glycosuria. In a statistical report Stephen Mackenzie states that out of eighty diabetics in Guy's Hospital forty-five died suddenly, and that it was important to observe that the pretty frequent gastric disturbances in the course of an absolute meat diet appeared to precipitate coma.

There is an increasing opposition to absolute meat diet and exclusion of all carbohydrates in the treatment of diabetes, and it appears that those have better results in the management of the disease who will not blindly follow an absolute system, but, after careful consideration of all the patient's history, adapt their therapeutics to his individual requirements. Cantani, who was, and Naunyn, who still is, one of the principal champions in Europe of an absolute diet, are opposed by Seegen, F. Myer, Gans, and others, and Gans, who has seen much and observed it well, said some time ago that if he was to choose for himself between an absolute meat diet and go on with diabetes and die, he would choose the latter. There is a doctor in Marburg, Germany, Kuelz by name, a man in good professional standing, who has in recent years made quite a reputation for himself as to special ability in managing diabetes successfully. He uses no secret remedies nor much in the shape of medicine, but tries to get as minute a history of his patient's case and constitutional and life history as he can, and adapts his treatment to the requirements indicated by the same, but never frames an absolute meat diet.

In every case that presents itself where I use my own treatment in the foregoing I try to get the sugar out of the urine by two or three weeks' absolute diet, rest, massage, and treatment of nutrition and use of all of a series of other means such as those three daily urine meals. That being accomplished, I then try to find out how much water-soluble sugar is excreted and take my diet, and have found this amount to be not without two and three ounces a day, which he is then allowed to have. The alkaline treatment in the above-mentioned form, or as Carlsbad mineral waters, is then continued.

If the only objection be not given with the patient, I

give small doses of opium, after the manner of Pavy. Always being on the lookout for the condition of the patient's stomach, bowels, and heart, I use the well-known remedies to fulfill symptomatic indications, having frequent recourse to baths, to massage, and, where there is cardiac weakness or cardiac muscular disease, to Schott's method of treatment by baths and resisted movements, the particulars of which you will presently hear from another speaker.

In diabetic coma I have purged the bowels thoroughly, and then filled the lower colon with alkaline water, injected hypodermically soda and salt solutions, also used various excitants, etc., to stimulate the heart's action, but so far have seen no case of recovery.

25 WEST FORTY-SIXTH STREET.

IS THERE A BETTER REMEDY IN CHOLERA? *

By ERSKINE B. FULLERTON, A. M., M. D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS,
STARLING MEDICAL COLLEGE, COLUMBUS, OHIO.

"By experience we find out a short way after a long wandering."—ROBERT ASCHAM.

It is apparent that all modern remedies for cholera have failed. The statistics of the late epidemic in Western Europe show this. Professor Rumpf, director of hospitals at Hamburg, places the mortality in the two great hospitals in that city at 48.4 per cent.; Dr. Wyman and Dr. Banks, are quoted in Sajous's *Annual*, as saying: "There were in round numbers 21,000 cases with 11,000 deaths," a mortality of over fifty-two per cent. In the epidemic in the Mississippi Valley of 1873 there were 7,356 cases with 3,800 deaths, a mortality of 51.6 per cent. The assertion above made in regard to modern remedies might be so extended as to include all remedies, for even the one I advocate (the treatment of cholera being a great international cause rather than a pursuit, advocacy were here permissible if anywhere in science) failed, and failed signally, but it was because of methods of administration which we now know to have been useless or worse than useless.

As the deductive method of reasoning in therapeutics seems at present to be the vogue, it is my claim that from the most strictly scientific standpoint and from the laboratory of Professor Koch himself come the data that should lead us to hope the most from, and trust most fully to, the remedy about to be presented for consideration. There have issued from this laboratory two lists of agents having control over the virulence of the cholera germ; one of these is here quoted by Surgeon General George M. Sternberg (*Medical Record*, October 1, 1902), of those that kill the germ, the other of agents that inhibit its growth.

Agents disinfecting after two hours' exposure:

Hydrocyanic acid	1 to 1,000.
Sulphuric acid	1 to 1,000.
Carbolic acid	1 to 150.
Ammonia	1 to 50.
Mercuric chloride	1 to 100,000.
Croton and castor oil	1 to 1,000.

Silver nitrate	1 to 4,000.
Arsenate of sodium	1 to 400.
Malachite green	1 to 1,000.
Methyl violet	1 to 1,000.
Carbolic acid	1 to 400.
Crocin	1 to 3,000.
Lysol	1 to 500.
Mercuric chloride (Bolton's experiments)	1 to 10,000.
Sulphate of copper (Bolton's experiments)	1 to 500.

A glance at the above list will show the impracticability of killing outright the spirilla in the intestinal tract of a human being whom we expect yet to live.

Let us suppose that the patient had in him one quart of the rice-water exudate to be disinfected absolutely in the intestinal canal. It would require, according to the above list, 11.3 minims of prussic acid of a strength that a whiff of the vapor is supposed to have proved fatal to its discoverer, Scheele, or its equivalent, more than one ounce of the dilute acid; of strong sulphuric acid it would require twenty-four drops, without allowing for any vehicle, for chemical combinations that would at once take place in the alkaline cholera fluid, for increasing or repeating the dose in case of need, and, so far as known, it would take two hours to attain the desired end.

Under like conditions and to effect the same result there would be required more than a hundred grains of caustic soda, about four grains of silver nitrate, more than a grain and a half of mercuric chloride, about forty grains of carbolic acid, with which this enumeration will close, as one in four hundred is the strength of carbolic acid necessary for inhibition, according to the list of Professor Koch, and therefore furnishes a clue to the relationship in time and potencies between inhibition and disinfection. One thing stands out clearly from the above, and that is this—the great scientist was right when he said the thing could not be done.

This leaves us to look for the best and least harmful inhibitant, and here, fortunately, we can be in no manner of doubt, as in the same amount of fluid a little more than three grains of quinine, inhibiting one to five thousand, effect that result.

Inhibitory list of Koch, with additions:

Alcohol	1 to 10.
Alum.	1 to 100.
Camphor	1 to 300.
Carbolic acid	1 to 400.
Oil of peppermint	1 to 2,000.
Sulphate of copper	1 to 2,500.
Corrosive sublimate	1 to 100,000.
Quinine	1 to 5,000.
Salol (Löwenthal)	1 to 100.
Tannin (Cantani)	1 to 200.

Forty grains of quinine, roughly estimated, would most nearly find their toxic equivalent in four glasses of champagne. The toxic effect of the ordinary ounce bottle of the one we have no reason for believing to be greater (mythical amantosis excluded) than a quart bottle of the

show, the cases formed parts of principal epidemics of cholera asiatica, giving the usual rates of mortality.

In my previous articles (*Medical Record*, October 1 and December 9, 1892, and April 29, 1893) there has been no reference to theories of the disease beyond the clearly established one of its germinal origin. As the sympathetic-nervous system theory, however, has played so important a part in previous epidemics, thereby leading to the use in treatment of the deductive and fallacious atropine, I have a word to offer in regard to the toxins, the hypothetical part played by them being likely to complicate too greatly treatment in future epidemics. 1st. Is the toxine, like most animal poisons above the grade of a bee sting, an essential poison, toxic *per se*, or an irritant one that may be mitigated by dilution? 2d. What becomes temporarily of the profound effects attributed to it or them when the saline solutions set the semi inspissated blood corpuscles once more afloat? The intestinal tract undoubtedly contains the poison or poisons; their absorption during the active stage of the disease, under the conditions then prevailing, must be more than doubtful. The liver of the polar bear must be full of them, or of allied poisons, but, while sailors have been sickened by partaking of it, there is no record of their ever having killed the bear. The only symptoms that seem fairly referable to toxic absorption pertain to the so called consecutive fever, remittent or typhoid in type, and these symptoms, it is especially noted by several writers, do not manifest themselves after the quinine treatment.

Before leaving the deductive portion of this argument, it remains to be noted that quinine is the only remedy that promptly and effectually disposes of one specialized disease germ *in situ*, that of malaria, and where these organisms are so low down upon the microscopic verge of life that there is doubt as to their animal or vegetable origin, it seems only rational to infer that it might—especially in the light of scientific data above recorded—as promptly and effectually dispose of another.

Collapsed, collapsing, and quinine-inhibited cholera; statistic cholera, "ambulant cases" (Dr. Schlömann) "that came at sick call" (Dr. Henry), excluded; quinine in all cases given by the mouth, in form of powder or acid solution:

	No. of cases.	Deaths.	Mortality.
Dr. Van Meerdervoort, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 2960, 2961, 2962, 2963, 2964, 2965, 2966, 2967, 2968, 2969, 2970, 2971, 2972, 2973, 2974, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626, 3627, 3628, 3629, 3630, 3631, 3632, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3650, 3651, 3652, 3653, 3654, 3655, 3656, 3657, 3658, 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 3830, 3831, 3832, 3833, 3834, 3835, 3836, 3837, 3838, 3839, 3840, 3841, 3842, 3843, 3844, 3845, 3846, 3847, 3848, 3849, 3850, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 3864, 3865, 3866, 3867, 3868, 3869, 3870, 3871, 3872, 3873,			

of 36.6 per cent. in mortality rate. If under the conditions above mentioned he could, in so large a number of cases, effect so great a result as this, it seems but reasonable that under more favorable conditions with us there should be a further reduction of one half in the mortality. In other words, with us it should have closely approximated the fourteen per cent. mortality rate, a little more than that of pernicious intermittent under quinine treatment of one in eight.

With the other names on the list of severest cases giving the fourteen-per-cent. mortality, the deaths are usually sufficiently accounted for. Dr. Bluff says: "Of the four that died one had had choleraic diarrhœa for four days before taking any medicine, and was in *statione mortis* when I was called; another received the medicine regularly, but after every dose of the quinine mixture received a glass of brandy (four an hour); the other two cases were amid the worst possible surroundings, and only one of the four that died was a robust young person." He gave at the rate of eight to ten grains of quinine per hour until improvement, then at longer intervals. The statistics of this epidemic at Aix-la-Chapelle show it to have been fifty-two per-cent. mortality cholera. Dr. Kossor gave six grains every two hours to his first patient: "After that I became bolder and gave it in the most dangerous cases every fifteen minutes, nay, every ten minutes in the same doses." He speaks of many of his cases "being affected in the highest degree." The narrative is that of malignant Asiatic cholera, much of it in collapse, and his good results (thirty cases with only two deaths) in part doubtless attributable to the fact that twenty-three of the number seem to have been soldiers, vigorous young men, in full strength when taken ill; but there is another circumstance worth noting, and this, that he ran the dose up to the rate of twenty-four to thirty-six grains of quinine an hour, when in his judgment the same seemed necessary.

Dr. Sargent, whose paper deals only with treatment we pursued in collapse of cholera, we say nothing of the simple diarrhœa that recovered under ordinary treatment." says of the four patients that died: "One, a nurse, had been sick a week with premonitory diarrhœa; she partially recovered, another vomited two fifteen grain doses of quinine and was treated by rectal injections of the remedy thereafter." (Dr. Putelli, Venice, 1836, writes even of his big slaughter in pills: "I have never seen more than three pills rejected by vomiting.") The third patient "had been in a disorder condition for three days prior to the attack, and after treatment was somewhat relieved and nearly prostrated." It is not likely that any but the one of these who vomited the quinine could have recovered under any other treatment already known or yet to be discovered. The fourth's case, in fact, and one more in fact have undoubtedly been great failures. There were besides the twelve patients receiving under quinine treatment in varying doses, thirty-six others, five of whom had under other treatment, and the whole number in collapse, thirty. Of the latter was a husband and wife, eight of whom merely died under the per cent. mortality cholera, running up to eighty per cent. in the other patients

tiary, where there were twenty-seven cases with twenty-two deaths.

So much for cholera with the patient already in collapse or rapidly passing into that state. Let us see how it has been with cholera that was quinine-inhibited from an earlier period in the history of the disease. All of this, so far as I am able definitely to ascertain, comes from the Mississippi Valley and may be regarded as the tart rejoinder of the Father of Waters to "Mother Ganges." The first of it is comprised in the cases of Dr. Schlömann, of San Antonio, Texas, in 1866. How many in the more severe stage of the disease he treated is not stated, as he especially says: "I wish to remark that all cases that came into treatment in the asphyctic state and all lighter ambulant cases of diarrhœa have been excluded. Under the quinine treatment two hundred and twenty cholera and choleraic patients recovered and three died." Mortality, 1.3 per cent. Of the three that died, one vomited the medicine (half gramme doses, by mouth, of sulphate of quinine), and an hour thereafter became cyanotic. Another, "intestinal diphtheritic form with complete anuria." Another, a child four years old, that received but five grains of quinine. He says of the first, it "needs no comment." Perhaps not, but he does not say that he repeated the dose, and especially does mention his disbelief in the use of the remedy in the "asphyctic stage" of the disease. The second patient might have died under any conceivable treatment; the child that got but five grains might perchance have recovered after larger amounts of the remedy. He speaks of "the great surrounding mortality" from the same disease; says, "our cholera was the real cholera of the Ganges Delta, and not a doubtful hybrid form of intermittent," and made a test experiment that ought to be conclusive.* Wondering "if the favorable results came from the remedy he was administering or were due to other accidental and unknown conditions," he changed for a period from the quinine treatment to that by opium, aromatics, and astringents, with the result that "diarrhœa returned in every case worse than before, and the discharges became so threatening that I speedily returned to the use of quinine. After this day I continued the quinine treatment with the same previous good results."

But the most continuing facts of this whole relation are to be found in the disease as it occurred in the Tennessee Penitentiary as a part of the epidemic of 1877. It should be remembered that this was an unheralded visitation of the disease, its introduction at New Orleans having been denied by the leading medical journal of the South at the time. The facts of this penitentiary epidemic are in brief as follows:

About the 1st of May, 1877, the penitentiary is visited by the penitentiary at Nashville, Tennessee, and under that auspicious auspice, back broken and lame men brought in, mostly at night, along the Nashville and Federal Railroad. Up to the 10th of May there were seven men with cholera; four deaths, a mortality of sixty per cent. By the 10th

of May there were twenty-seven cases, twenty-two deaths, and a mortality of eighty per cent. in the other patients.

in the *Encyclopædia Britannica*? Is it not strange, if true (as Lieutenant Bent, of St. Louis, Mo., avouches), that old log books show the north pole to have been sailed over and past a degree or more, a hundred years ago; that they should have gone further for whales in the eighteenth century than for glory since? Is it not strange that a tanner from these parts, who afterward tanned his way to Appomattox, should in his first skirmish make the practical discovery that "in every engagement comes a time when both sides are weary of the battle, and then the commander who pushes the fight wins it?"

It is a fair question, however, *why* the above favorable results came to be overlooked. The answer can probably be best given in tabular form.

[illegible]

	No. of cases.	Doses.	Per cent mortality.	Method.
M. S. Green, <i>Walt. Med. Times</i> <i>and Trans.</i> , Oct. 8, 1890,	4	1	100	Intravenous.
D. J. A. Parker, <i>Walt. Med. Times</i> <i>and Trans.</i> , Oct. 8, 1891,	2	2	100	Intravenous.
London Hospital Ship, <i>Walt. Med.</i> <i>Times and Trans.</i> , Jan. 6, 1891,	10	12	63	Hypodermic.

To this must be added the belief that the remedy was generally used in the Mississippi Valley in 1873, when used at all, in insufficient doses by the mouth, or more usually by hypodermic method. My reasons for believing the hypodermic method of quinine administration to have been chiefly used in the city of Nashville, Tenn., during that year have been stated elsewhere. There are no better names given in the profession than the above of the dead physician and the yet living surgeon. Their experiments were made, it must be remembered, thirty one years prior to the discovery of the Koch germ and of its habitat in the human body, and without a doubt were undertaken to obviate the oft-urged objection that remedies were not absorbed in cholera. Nevertheless, in the above can doubtless be found the reason why Professor Koch, while discussing the effects of saline and other remedies, failed to say a word favorable to the use of quinine in the disease, because he knew that it had failed to cure it.

So far as I can find any reference to quinine at all in the epidemic of 1793 in Europe, it was almost to a certainty and hypochondriac ally. The only mention of its use in the last European epidemic, in sources available to me, was in Russia, in the form of so-called "Belkin's drops".

Twenty to thirty drops of this mixture was the whole dose containing two thirds and one grain of quinine respectively. However effective these small doses might be as an antiseptic, in a malarial miasmata it is a good form of the disease, they are insufficient for fever, chills, and sweats. One may draw the waters of the Ganges as more than those of the Nile "with impunity." The patient

The institutional portfolio composed of 100 (100 months) of 25-year-old, early-to-mid-care, private-sector employees (PPEs) by firm size and age. The sample is split between young hypergrowth firms (6 months post-inception) and established firms (24 months post-inception). Each firm is split 2:2:2:2 between four, as noted in Figure 1 (shown in the next section).

in powder, diffused through a small quantity of water, or in acid solution, at hourly intervals, until twenty to forty grains have been given; afterward *pro re nata*, should be the ordinary instructions; the same dose at half-hourly intervals for a sufficient time in collapsed or in *foudroyant* cases; smaller doses, perhaps, at longer intervals in choleraic diarrhœa. There should certainly be retained of other treatment, appliances for the restoration of heat; saline hypodermoclyses to supply lacking serum to the blood; morphine hypodermics to allay pain and cramps, with enteroclyses of quinine where, as past experience shows rarely to have been the case, the remedy is vomited; and in the sequent enteritis or otherwise persistent diarrhœa, calomel in small doses should not be lost sight of. That by so treating our patients we may hope for a mortality in collapsed and collapsing cases of about fourteen to twenty-five per cent. only; that by earlier administration of the remedy, instead of the use of other agents that have heretofore permitted so many cases, to run on into collapse and death, we may reduce the mortality in such cases to two to five per cent. only, seems a fair assumption for the best of reasons—i. e., it should be so, and so far it always has been so.

THE IMPROVED HIGH TENSION COILS

BY A. D. BUCKWELL, M.D.

The induction apparatus shown in the accompanying cuts was somewhat crudely illustrated in a previous number of this journal.[†] It proved so thoroughly satisfactory, and was such a decided improvement both as regards the variety of effects obtained and the readiness with which induction currents of both high and low tension could be utilized, that no pains have been spared to improve its mechanism and make it available for outside as well as office use. The new and important feature that I claim for this apparatus is the combination and concentration in a single coil of all the different lengths and thicknesses of wire necessary for every variety of quantity and tension that has become such an essential feature in the intelligent adaptation of electricity to diseased conditions, with the ability to increase currents of any quantity or tension from zero to the maximum effect desired. It seems hardly necessary, after saying I have done what others cannot, to refer again to the extreme importance of correct information in regard to induction coils. There exists, however, a great deal of misapprehension, and indeed, one very prevalent among the laity, as to the nature and extent of their utility. And the object of this paper is now perhaps best reflected in the frequency of the question, "What are the advantages?" Very much the same. One would very naturally suppose that because the most potent of remedies had been called upon to treat a disease, it was useless and even to be physically and physiologically injurious. You very markedly see in other cases the opposite result, according to the position of the mind and the character of the Action. Thus we sometimes find a patient brought through those

PIPERAZINE IN NEPHRITIC COLIC.

By JOHN MCKINLOCK, M.D.

VISITING GYNAECOLOGIST TO WEST-SIDE FREE DISPENSARY, CHICAGO.

FROM a study of the literature of piperazine, embracing the experimental research of Finzelberg, of Berlin, and other noted chemists, supplemented by the reports of eminent clinicians both of Europe and this country, the writer was induced to prescribe it in a case of severe renal colic incident to the gouty diathesis. The result so far exceeded his most sanguine expectations that he was led to use it in three subsequent cases, with such benefits so quickly obtained as caused him to record the cases under his observation.

While four patients is an exceedingly small number from which to extract clinical data, it appears to be eminently justifiable from the very pronounced brilliant results obtained in all the cases cited.

CASE I.—Mr. S., aged forty-nine years, German, weight two hundred and forty pounds; railroad manager; full habit; always enjoyed good health, up to three years ago, when he complained of pain in small joints of the feet, ascribed to rheumatism; always has been a high liver with little or no exercise, habits sedentary. Up to the time he came under treatment had been through three typical attacks of renal colic, and had been treated for gout previous to these attacks many times, the toes and knee joints being principally affected, the leg being flexed on the thigh and immovable for a period of two weeks at a time. Each subsequent attack increased in severity and lasted many days longer than the preceding one. At the time I first saw him he was suffering excruciating pain in the region of the right kidney, with daily quantity of urine voided only a third of the normal quantity. Up to the fifth day after the onset of this attack fifteen hypodermics of a quarter of a grain of morphine sulphate had been given without more than slightly dulling the keen edge of the pain; in addition, all the usual solvents, alkaline waters, salts of lithium, etc., were tried without any appreciable success. When, on the sixth day, the advisability of an operation was discussed, it was decided that we would employ piperazine for twenty-four hours, and he was given by results obtained at the end of that time. I administered phenocoll, for its well-known effect on the nerves, with ten-grain doses of piperazine administered every two hours until two draughts of the latter had been taken, this was given in connection with a five-grain tablet of lithia. The next or seventh day, eight or four ounces of urine were voided, showing large particles of uric acid microscopically; the temperature, which had previously been 100° F., fell to normal, but some very slight pain continued for twenty-four hours longer, during which time greater fragments of uric acid were excreted in the urine. The actual time of treatment with piperazine was two days, with a complete subsidence of the symptoms. The patient lost twenty-six pounds. Upon twenty-four hours' two draughts of piperazine (one-half, seventy-five grains).

CASE II.—W. T., weight one hundred and twenty pounds, and fifty-eight years, resident of a large country settlement, temperate, high liver, confined to his office in daily professional culture. First attack eight months ago; treated in the usual way, confined to bed ten days; pain somewhat relieved, but three hypodermics of morphine failed to procure relief, and the second attack occurred within ten weeks and lasted ten days, previous time. The patient was unable to lie down or move without pain. Five grains of piperazine and five grains of lithia

coll were administered in lithia water from the onset of the attack, given every three hours for three days. When small fragments of uric acid were voided the temperature fell to normal; patient kept on ten-grain daily doses for a week longer; pain entirely subsided at the end of the third day. Examination of urine daily showed decreasing quantity of uric acid; after seven days' treatment entire absence.

CASE III.—E. S., aged forty-four years, weight two hundred pounds. Had taken a course of alkaline waters at many of the famous resorts, only mitigating slightly his condition, which was similar to that of Case II, without positively affording the desired relief. He had suffered with renal colic for four years. Although concretions of uric acid were voided, the attacks of colic continued at intervals. When first seen he had been in severe pain for eight hours, followed by marked hematuria, which lasted only one day.

The pain would not yield to morphine, and was only subsided after four days' treatment with five grains of piperazine combined with five grains of phenocoll every two hours. Uric-acid fragments were detected in the urine by the naked eye on the third and fourth days.

The patient was advised to continue treatment with small doses for a few weeks, but, as he was free from suffering, thought it was not necessary, and decided, on account of his marked gouty tendency, to go to Carlsbad for three months. Having passed through many such sieges previously, and realizing that the attack was markedly cut short in this instance, he asked for a copy of the prescription that he might have it filled in Europe, if necessary.

CASE IV.—Mrs. J., aged sixty-four years, weight two hundred and forty pounds; phlegmatic temperament; no physical exercise; high liver; gouty joints; had been afflicted with nephritic colic at intervals of a few months for several years. Attacks comparatively slight, never having passed a calculus, and usually subsiding entirely after a course of alkaline treatment for three or four weeks. Occasionally hematuria of from one to three days' duration followed the outbursts of the colic. When first seen in one of these attacks pain was very intense, temperature 100°. A hypodermic of a quarter of a grain of morphine sulphate and one two-hundredth of a grain of atropine was administered without relief, repeated in half an hour. When piperazine in five-grain doses with same weight of phenocoll was given every two hours for two days, diuresis was considerably increased, pain ceased, and temperature fell to normal in the first twenty-four hours after its administration. Uric-acid deposits were discovered with the naked eye in the urine, with a continued evacuation of concretions for three days. The patient continued under treatment for two weeks, fifteen grains a day. Uric acid was entirely eliminated and general condition better than for years.

My slight acquaintance with this drug leads me to be desirous for further cultivation, for in my hands it certainly has been a first-coming in the "time of need."

The first case mentioned was an extremely severe one, and in this the most pronounced effects were marked. It will be noticed that within forty-eight hours three attacks and a quartet were administered, producing immediate results, showing the wonderful solvent power of the drug. This large dose produced no action and symptoms of the nature of acute hematuria, common to solutions of the substance, which subsided entirely at the end of the third day.

Dr. David D. Stewart says: "Scarcely in the preparation of piperazine to the United States had it been introduced."

1. Piperazine (dihydroxy diamine) is only of use and

but also of phosphates, etc., in consequence of its power of disintegrating the mucus or albuminoid cementing material which binds them together.

2. Piperazine relieves renal colic and other local pain associated with the formation of concretions in the urinary tract, owing to its power of dissolving the sharp edges of calculi and giving them a slippery character.

3. As a consequence of the effect indicated above, piperazine determines the evacuation of "stones" from the kidneys, ureters, or bladder very soon after administration and before time has elapsed for complete solution.

4. Piperazine is not only superior as a solvent of uric acid and urates to all previous remedies, but also is free from their disadvantages.

5. Piperazine does not render the urine alkaline and so favor the deposition of phosphates.

6. Being free from caustic or irritant action, piperazine has been used successfully and without any ill effects for the irrigation of the bladder in the treatment of vesical stone.

VANDERBILT UNIVERSITY, JUNE, 1897.

MYCOSIS TONSILLARIS.*

By C. E. BEAN, M. D.,

ST. PAUL, MINN.

THE occurrence of mycosis tonsillar is sufficiently rare to merit special mention when the disease is encountered. The older authorities on laryngology make no mention of it, and it has only lately become recognized, notwithstanding the first case was reported by B. Fraenkel† in 1873. Since then it has been reported by quite a number of writers, mostly foreign, it being rather infrequently met with in this country.

Lennox Browne‡ says the disease is rare in England and that he has seen very few cases of fungoid growth in the pharynx, but that in every instance the pathological report was that leptothrix was the prevailing parasite present.

Decker and Sieffert made a report to the Medicophsical Society of Würzburg in January, 1888, of thirty-four published cases.

Oltuszewski§ reports a case occurring in a patient at the age of sixteen where there was intense fever, and where, after six months' treatment, fresh colonies of leptothrix constantly reappeared. This case was treated by removing the deposit with forceps and gargles of corrosive sublimate|| (1 to 5000).

The disease is due to the presence of the specific spore leptothrix, a portion of the mucus membrane. Its primary growth is not so easy of detection, although the anterior part of the mouth is gradually the seat of the disease, and the spore, which grows due to the fungus development in the posterior part of the throat, it here is first found in

large quantities in the masses of decomposition within and between the teeth. Impaired general health is no doubt a prominent predisposing factor in the etiology of the disease, for the *Leptothrix buccalis* is probably more or less present in all buccal secretions.

In a case of pharyngo-mycosis Schmiegelow, of Copenhagen, found a bacterium not yet described and called it the *Bacillus anthracoides buccalis*.

Hemenway* in his cases, did not find a constant form of leptothrix, and doubts the evidence that the growth is a result of the leptothrix. Certainly *Leptothrix buccalis* is found in nearly if not all of these cases of mycosis; but then, on the other hand, this parasite is found in other parts of the buccal cavity where the fungus never grows.

The special variety found is the *Leptothrix maxima*, "an organization consisting of long, thick, or slightly curved filaments resembling the *Buccalis maxima*, of which it is probably a variety."

The location of the fungus is on "the tonsil, base of the tongue, posterior wall of the pharynx, and glosso-epiglottic pillars and folds."†

Bosworth‡ says the most frequent starting point is the faucial tonsil and that it is very rarely seen on the pharyngeal tonsil.

Semon reports a case where the growth was on the soft palate and uvula.

It is essentially a chronic disease, though it may be developed during an attack of acute amygdalitis.

Metzner§ reports a case following acute amygdalitis where death occurred in two days. The post mortem examination revealed purulent mediastinitis, pericarditis, and purulent pleuritis; also an abscess in the right tonsil.

While usually a disease of adult life, it has been observed by Baginsky|| in a child twelve years old and by Heryng^ in a patient aged sixty-two. Damoschino^ regards an acid reaction of the oral secretions as favorable to the development of the spores.

With these cases there is an unusual amount of mental depression which seems to be characteristic of the disease, thus increasing the deterioration of the general health.

The following case illustrates some of the peculiarities of the disease:

Mrs. —, aged twenty-six years, was referred to me by a brother practitioner in May, 1893. She had been subject to attacks of follicular amygdalitis for seven years and had had the throat burned with nitrate of silver on several occasions. The last attack had begun two months before she consulted me. There had been a great deal of pain in the throat and very high fever, and the usual remedies for acute amygdalitis had been used with little benefit. The pain and the fever had gradually but slowly abated, the white spots remaining on the tonsils and causing a considerable degree of irritation in the throat with a constant desire to cough. The disease had at this time extended

* B. Z. A. V., Philadelphia, January, 1897, p. 38.

† B. Z. A. V., Philadelphia, No. 1.

‡ B. Z. A. V., Philadelphia, July, 1897, p. 189, 1899.

§ B. Z. A. V., Philadelphia, November, 1889, p. 465.

|| B. Z. A. V., Philadelphia, May, 1896.

^ B. Z. A. V., Philadelphia, July, 1897, p. 165.

^ B. Z. A. V., Philadelphia, July, 1897, p. 165.

^ B. Z. A. V., Philadelphia, July, 1897, p. 165.

* B. Z. A. V., Philadelphia, July, 1897, p. 189, 1899.

† B. Z. A. V., Philadelphia, No. 1.

‡ B. Z. A. V., Philadelphia, May, 1896.

§ B. Z. A. V., Philadelphia, November, 1889, p. 465.

|| B. Z. A. V., Philadelphia, July, 1897, p. 165.

^ B. Z. A. V., Philadelphia, July, 1897, p. 165.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 18, 1894.

SENSORY WARNINGS OF EPILEPTIC SEIZURES

Is one of his interesting Neurological Fragments, published in the *Lancet* for July 28th, Dr. J. Hughlings Jackson relates the following case: A man, twenty-one years old, consulted him in March, 1882, for epileptic attacks. The first attack began with a noise, an auditory warning; he became deaf and could see people speaking to him, but could not hear them. He became unconscious and bit his tongue, and foamed at the mouth and struggled; about ten minutes afterward he became partly conscious. He had ten or twelve seizures, in some of which he bit his tongue. A few nights before the first attack, he walked in his sleep, as he expressed it, and remembered having heard a beating noise, and was partly sensible. He walked from his own bed to his brother's and changed the pillow. These actions were, no doubt, says Dr. Jackson, evidence of a prior epileptic attack and not ordinary somnambulism. During the day he would have slight attacks which he called symptoms. He had three or four of them in a day, and in them he heard strange noises, became deaf, and was not able to speak. This condition lasted for three or four minutes, but he did not become unconscious, and he stated that he was not even defectively conscious. The strange noise was like a beating, as if time were being marked; it was rather loud and seemed to be in both ears and in his head. There were no spectral auditory words with or after the noise during this attack.

The author particularly wishes to draw attention to the patient's remark that every time the noise came—that is, in each attack—he had the feeling that he had heard the noise before and knew what was coming next. In the intervals between the paroxysms there was no deafness. The patient continued to have both slight and severe attacks.

The author gives the following facts from notes taken in August, 1883, which refer only to slight seizures. They lasted about one third of an hour (10 to 15 min) and in these the patients showed no really characteristic. The auditory symptoms were: 1. Crude sensation: there was the noise, but not as good as that from the 2000 or 25000 auditory tones. As now heard. Really it was something that in there was a sort of new higher sound without spectral sound. It seemed at the same time as that of hearing. He could not hear words, but only a noise which he could not people speak. He had the feeling that the words which the author spoke, possibly, were pronounced. The patient thought that the meaning of the sentence could be understood and was under the impression that he understood. There was however no word.

deafness and also deafness to all sorts of sounds. 3. Speech symptoms. He could not speak, but made some articulatory noise; he could not think of the word he wanted to say. 4. Writing. He was a shorthand writer, and the seizure some times came on while he was writing. He went on writing while in this condition, but, in reality, wrote no words and made no proper combinations of letters. 5. Reading. He could see letters well, but could not read. There was no general defect of sight, but that special imperception called word-blindness. He carried a newspaper about with him to test himself; he would, if attacked while reading, go on in the sense of seeing the words and following the lines, but he did not know what he was doing. The author asked the patient to write down for him his spectral words, and he brought a paper with combinations of letters which were not words at all; he could not express himself in these attacks. The value of these combinations of letters, says Dr. Jackson, is that they are at least curious evidence that he was not unconscious, even if he was defectively conscious in his slight seizures.

The author thinks that it is well to consider that the warning in any paroxysm signifies the seat of a discharging lesion, that the warning is in that sense localizing. In some cases epilepsy begins with warnings of smell, in others with warnings of color, and in others with warnings of noise. I should also be recognized that there are in these cases three varieties of cerebral paroxysms—one depending on a discharging lesion of a cortical center for smell, another on a lesion of a cortical center for vision, and a third on a lesion of a cortical center for hearing. In the case related the author thinks there was a discharging lesion of some part of the auditory center of Ferrier. The discharge presumably spread from this fulminating point to normal cells—not necessarily to those morphologically nearest, but rather to those physiologically nearest—those normal cells which are united to the highly unstable cells of the discharging lesion by lines of least resistance. Probably in this case several of the phenomena were the after-effects of the discharge; they were correlative with exhaustion of cells discharged in the paroxysm, and were metaparoxyssmal, methepileptic. Very probably there occur cerebral paroxysms with an auditory warning without the special interperceptions, word-deafness or word-blindness, and without inability to speak. Much, no doubt, says Dr. Jackson, depends on whether the discharging lesion is a part of the right or of the left half of the brain. Cerebral paroxysms with the phenomena mentioned occurred in one case under his observation without any sort of auditory warning.

THE CHANGES PRODUCED IN LIVER CELLS BY THE ACTION OF SOME ORGANIC AND INORGANIC COMPOUNDS

No. 34 of the *Proceedings of the Royal Society* contains an account of some experiments made by Dr. T. Lauder Brunton and Dr. S. Delepine, of London, who state that their object was to ascertain the action of drugs on the cells of the liver and

contact, if possible, the changes in the cells with the physiological action of the drugs and their chemical structure. The following drugs were selected by Dr. Branton as being the most suitable for this investigation: Benzene, phenol, toluene, aniline, toluylene diamine, chrysophanic acid, pilocarpine nitrate, atropine, ammonia, ammonium chloride, nitric acid, and sodium iodide. The various appearances which the authors observed as the result of the purely physiological stimulation of the liver produced by the ingestion and digestion of a meal, and the most important changes indicating various states of activity were: 1. The size of the cells. 2. The distinctness of the mitoma and of the cellular cleavage. 3. The size and arrangement of the meshes of the mitoma of the cells. 4. The size of the biliary canaliculi. 5. The amount and distribution of the glycogen in the cells and in the lobules of the organ. 6. The amount and distribution of granules giving the reaction characteristic of inorganic ferric salts.

A number of experiments are related demonstrating the appearances produced in the liver soon after the administration of the compounds mentioned above, either subcutaneously, by the rectum, or by the mouth, to rabbits that had taken a moderate amount of food (an ounce and a half of carrots from seven to nine hours before death) and to rabbits that had not been fed for at least twenty-four hours before death. In order to estimate the changes produced, the organs of the animals to which the drugs had been administered were compared in each case with those of animals in the same stage of digestion, but to which no drug had been administered. The effect which the administration of various drugs has on the distinctness of the cellular mitoma and on the distribution or arrangement of that mitoma and of the paramitoma resembles in the case of a certain number of drugs, that of pilocarpine, and in others that of atropine. The first drugs may be said to stimulate glandular activity, the latter to restrain it; only a few of those experimented with seemed to have neither a stimulating nor a depressing action. On this basis the writers subdivide the compounds as follows: 1. A stimulating or excitatory group, with pilocarpine as the type. 2. A neutral group. 3. A depressing or depresso-secretory group, with atropine as the type.

Of the excitatory group the following compounds produced changes in the mitoma of the cells denoting an increase in the order of concentration: Toluene, benzol, sodium iodide, pilocarpine, chrysophanic acid, ammonium chloride, toluylene diamine, and nitric acid. Another seemed in one case to have a stimulating effect, but this was doubtful. No drug was found altogether neutral, but two drugs seemed to have a depressing and not a depressing action, although the results produced denoted no changes in the cells; it has been used, they probably acted too powerfully on persons. These compounds were atropine and strychnine. The following compounds belong to the depresso-secretory group: Chloroform, ammonia, and camphor.

In each of these two great groups it was possible to arrange the members in a series based on the difference of effect that had on the amount of glycogen and on the concentration of

compounds giving the reaction of inorganic ferric salts in the liver. In the excitatory group, sodium iodide, toluylene diamine, chrysophanic acid (toluene?), and (ammonium chloride?) caused a marked increase of glycogen in the liver, and (ammonium chloride?), nitric acid, pilocarpine, and benzol gave rise to no marked increase of glycogen, but sometimes even to a diminution. Sodium iodide, toluene, and toluylene diamine caused a very marked diminution in the amount of free iron in the liver, and ammonium chloride, nitric acid, pilocarpine, and benzol (in the fed liver) caused a diminution in the quantity of iron, but not to the same extent as the first, and the iron was often so distributed as to remind one of the appearances observed in an active liver. In one case only (in the fasting liver) benzol caused a doubtful increase of iron. In the group of depresso-secretory compounds, ammonia caused a diminution of the glycogen and an increase of iron. By its influence on the accumulation of glycogen and of iron, phenol acted distinctly in the same way as the depresso-secretory compounds—thus, it caused a diminution in the glycogen and an increase in the iron. Aniline caused little change in the glycogen, but a great accumulation of iron in one case. The action of aniline evidently requires to be studied more specially. Atropine caused a slight diminution in the glycogen and little change in the iron.

The authors are satisfied that much is to be learned of the affinities of drugs and of their physiological action by the methods which they have been using in this study. The anticipation of unknown difficulties in a field practically new has caused them to spend much time in observations many of which have proved useless, and they think it would be unwise in the present state of the investigation to attempt to give more dogmatic conclusions than the foregoing.

MINOR PARAGRAPHS.

THE BRITISH MEDICAL ASSOCIATION.

The recent meeting of the British Medical Association can be called an average one, in regard both to attendance and to scientific interest. No very new or striking contributions were made, but the papers were many of them well written and up to date. The division of labor by which all sectional work is done in the morning, while the afternoon is reserved for general meetings, has been employed here to advantage. The social events have assumed a very great importance, and threaten to interfere with the scientific interest of these meetings.

THE MEDICAL CORPS OF THE NAVY.

The difficulty of filling vacancies by suitable appointments to the rank of lieutenant seems to have attracted attention, and it will hardly be surprising to find the members of the medical corps of the navy. There is a serious difficulty in the way of getting a sufficient number of officers to fill the vacancies. It is not so much that the medical corps of the navy is not so well supplied as it should be, but that the medical corps of the navy is not so well supplied as it should be, and that the medical corps of the navy is not so well supplied as it should be.

QUININE IN THE TREATMENT OF CHOLERA.

DR. FULLERTON's article entitled *Is there a Better Remedy in Cholera?* published in this issue, seems to us more than ordinarily noteworthy. We think the author brings forward in support of his conviction that quinine, properly used, has a decided remedial action in Asiatic cholera evidence that is quite sufficient to warrant further trials of the drug.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 14, 1894:

DISEASES.	Week ending Aug. 7.		Week ending Aug. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	32	3	37	4
Shigeloid fever.....	31	3	30	7
Cerebro-spinal meningitis..	0	0	0	0
Mumps.....	20	2	22	2
Diphtheria.....	129	27	123	15
Scarlatina.....	6	1	2	1
Tuberculosis.....	54	93	100	90

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 20 to August 14, 1894:*

STARR, A. N., First Lieutenant and Assistant Surgeon, now at Fort Sam Houston, will proceed to Camp Eagle Pass, Texas, and report for temporary duty.

WINTER, F. A., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect about October 1, 1894, with permission to apply for an extension of one month.

WOODS, H. ALFRED A., Lieutenant Colonel and Deputy Surgeon General, is granted leave of absence for one month and twenty days, to take effect on or about August 15, 1894, with permission to leave the United States.

WOODSON, R. S., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect about August 6, 1894, with permission to apply for an extension of one month.

A board of medical officers to consist of HAYDEN, VETERARY, Major and Surgeon, Home, JOHN VAN R., Major and Surgeon, and TOWNSEND, GEORGE H., Major and Surgeon, is by authority of the Secretary of War appointed to meet at West Point, N. Y., on August 15, 1894, or as soon thereafter as possible, for the purpose of examining the reports of the first and third regiments, the members of the second regiment, and other troops, and such other troops of the Military Division and affiliates, for whom there may be ordered before it.

CORCORAN, W. FRANCIS, Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about August 1, 1894.

WAGGONER, WALTER J., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about August 1, 1894.

Naval Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Navy, from July 20 to August 14, 1894:*

HARRIS, J. C., Surgeon, is granted leave of absence for one month, to take effect about August 1, 1894.

PARKER, J. B., Surgeon. Detached from the U. S. Steamer Charleston and ordered to the U. S. Steamer Independence. McCOEMICK, A. M. D., Passed Assistant Surgeon. Detached from the U. S. Steamer Charleston and ordered to the U. S. Steamer Monterey.

BRODERICK, R. G., Assistant Surgeon. Detached from the Mare Island Hospital and ordered to the U. S. Steamer Charleston.

HOPE, J. S., Assistant Surgeon. Detached from the U. S. Steamer Charleston and ordered to the Mare Island Hospital.

ARNOLD, F. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Monterey and ordered to the U. S. Steamer Charleston.

Du Bois, F. L., Medical Inspector. Detached from U. S. Steamer Chicago, ordered home, and granted two months' leave.

Society Meetings for the Coming Week:

WEDNESDAY, August 22d: Canadian Medical Association (first day—St. John, N. B.).

THURSDAY, August 23d: Canadian Medical Association (second day).

Letters to the Editor.

THE BLACK VOMIT OF PREGNANCY.

GREENVILLE, GA., August 6, 1894.

To the Editor of the New York Medical Journal:

Sir: In your issue of July 28th, containing a report of the proceedings of the American Gynecological Society, appears the synopsis of a paper read before that body by Dr. Edward P. Davis, of Philadelphia, entitled *Fatal Nausea and Vomiting of Pregnancy*. The author, in describing the symptoms of this condition, lays special stress upon the coffee-ground-looking ejecta from the stomach and the evil it portends. As bearing specially upon this particular symptom, I beg to report the following case:

Mrs. B., aged seventeen years, one month advanced in pregnancy, was seized with nausea and vomiting on July 10th. There being some doubt of the existence of pregnancy at this time (she having gone only a few days over the period of her expected menstruation), the usual remedies addressed to the stomach were administered with only slight palliation of the annoying symptom. Two weeks later I was again called to see her, when examination revealed an impregnated uterus. Remedies were immediately addressed to this organ, including cocaine, which had also been given *per os*. No abatement was at any time noticeable, and, although her previous health had been perfect, it required no prophetic vision to foresee the result if the vomiting was allowed thus to continue. Abortion was at once determined upon, pending which the ominous coffee-ground vomit appeared. The operation was hastened and speedily terminated without the least untoward result, hemorrhage being practically nil. The vomiting soon ceased, as was expected, and, as she was cheerful and apparently doing well, I felt no real cause for concern. There was only a question of a very short time. While, as yet, however, I was again summoned, very attracted by the mother's statement that the vomiting had returned. On my arrival I found the black vomit pouring forth from her mouth, and the mother in imminent danger. Everything possible was done without the slightest alleviation of the distressing symptoms. Within thirty minutes, from over-exhaustion she died the following morning.

[illegible]

The Report of the Council showed the affairs of the association to be in a comparatively good condition. The treasury had only \$20,000, or \$1,683 more than last year, while the general fund was \$79,110, or \$1,991 more than last year. Income from all sources, which had been \$100,000, had increased to \$122,000, which had come from several sources. At the end of December, the total number of members present at the convention was 1,000. The number of members of the association was 1,000, and the number of members of the association was 1,000. The number of members of the association was 1,000.

known basis of the motor physiology of the brain and of the centers of the special senses. That the differentiation of the special seat of the intellectual faculties had not yet been determined in detail might perhaps depend on their intimate relation to each other. The new idea of treating myxœdema led up also to the question of feeble-mindedness in children, cretinism, and especially sporadic cretinism, which was only myxœdema in childhood. Here, if anywhere, were prolific proofs of the subject of to-day's address—the benefit conferred upon the State by the investigations of the profession. During the last century the attention of medical men in all parts of Europe and in America had been turned to the differentiation of the various forms of cretinism and idiocy, and to the possibilities of amelioration of the physical and mental feebleness of such cases. The subject was too vast for anything beyond mere mention now, but it touched biologists on questions of heredity, surgeons with reference to the relief of synostosis, and physicians, legislators, and criminal lawyers in its various phases. We were at last obtaining more accurate data for work, by collecting real percentages of feeble-minded children in board schools, a work in which the association had borne no ignoble part. We were learning that, except in the case of the microcephalous, cranial developments did not help us much in these researches, nor even pathological appearances. The power of attention, and the consequent results of education, were almost the only trustworthy data for differentiation. But this benefit to the State, due mainly to members of the medical profession, obtained not only in raising some of these afflicted ones to a dim apprehension of the abstract, but many more to a condition in which they were, partially at least, able to earn their own living, and be no longer wholly a burden to the community. This question too touched the great subject of criminology, one that had suffered from its most ardent supporters. The criminal type, according to the notions of these learned men, would include too many of us to be of any practical use. And, after all, in England most certainly, the criminals who were unable from physical abnormalities to resist temptations to crime formed an exceedingly small portion of the convict population.

Professional influence should always be used against gluttony and drunkenness. We might not claim a vast number of the profession as total abstainers from alcohol, but we did claim the majority as temperate and as teachers of temperance.

The Address in Medicine was delivered by SIR T. GRAINGER STEWART. His subject was Influenza. He described in considerable detail how the alimentary system, the hæmatopœiœtic system, and the circulating system were affected by the disease, and said that the respiratory system suffered changes more frequently in connection with influenza than any other organs of the body. Pneumonia was by far the most formidable sequel, and displayed marked differences of type from the normal course of the disease. For the history of the several cases of the process we were indebted to Dr. R. Pfeiffer, who, during the summer of 1900, had seen and post-mortemmed the bodies of several persons who had died of influenza.

[illegible]

That the symptoms corresponded to those that we knew to be due to such poisoning, or, in other words, that the analogy of diseases of which we could speak more positively pointed that way. If such was our conclusion as to the general symptoms which occurred in all cases of influenza, still more must it apply to the complications and the sequelae. We had already traced and illustrated the chief groups of these; let us now go over them and see the bearings of each. Our first group included complications and sequelae which were due to the action of other micro-organisms. How did the influenza process stand related to these? He believed in a considerable number of ways: 1. By affording a nidus in which germs might readily multiply. 2. By lowering the general power of resistance to micro-organisms. 3. It was possible that some of these might illustrate the principle which was known to scientific workers as mixed infection.

Applying knowledge gained by analogy to the influenza processes, we seemed entitled to conclude: 1. That the bacillus, which was not widely disseminated throughout the body, produced its constitutional effects by its chemical products. 2. That these chemical products might probably be of the nature of albumoses associated with an organic acid or acids, or with an alkaloid or alkaloids, which might perhaps be produced indirectly by means of a ferment secreted by the bacillus. 3. It was probable that the production of these substances took place to some extent in the spleen, which was so often found enlarged in cases of influenza. 4. That these poisonous products acted upon nervous and other tissues, producing the great variety of functional and structural changes met with in the later stages of the influenza process.

Isolation was advised when possible. But even where isolation was impossible, much good might be done by destruction of the sputum and of the nasal secretion by disinfectants, and precautions as to the discharges, if once efficiently taken, would tell materially upon the epidemics. It might be asked what was the best disinfectant for destroying the bacilli. Fire and water were no doubt efficient, but, considering the very sensitive nature of the bacilli, no doubt any of the antiseptics ordinarily in use would suffice. If we could thus deal with the bacilli discharged from the body, the question next arose whether we might not deal with them within the bronchial tubes. Inhalations of many antiseptics had been recommended for this purpose; eucalyptus and menthol had been, perhaps, among the most popular. For his own part he had decided to try, whenever he had the opportunity, the injection into the trachea of such substances as had proved serviceable in other diseases of the respiratory tract.

The Address in Surgery was delivered by Professor J. GREIG-SMITH, of Bristol. The speaker stated that he should leave the science of surgery alone, and speak of the art; instead of the making of surgery he should speak of the making of the surgeon. The surgeon was, first and foremost, a physician, a man trained in the laws of health and disease, in the ways of preserving health and of curing disease. He was a man who could carry the treatment of a class—a small class—of diseases further than the physician, and that was all. The physician, on his side, went beyond the surgeon. But both met. The foundation of their art was knowledge of the material to be worked upon, the human body. Anatomy to its uttermost detail, and of every normal and abnormal, was the foundation of all good surgery. In the persistent and overwhelming claim of its science, there was real danger that surgery might lose something of its art. There was no real teaching of the art of surgery in the country. Here and there a few favored houses in which were permitted to pick up what knowledge they could by looking on and by helping, but

For his todeselle,
And his cloke of Calabre,
With alle the knappes of golde,
And be fayre, by my feith!
His phisik to lete,
An I herne to labour with lond,
For libbele is swete,
For murderis is manye leches,
Lord hem mende!
They do men deye through hir drynkes,
Er destynce it wyde.'

—ED. WRIGHT, 1856, vol. i, p. 133.

"'Pers' in Chaucer's description is the obsolete French word for bluish gray. Taffata and scudal, which formed the linings of the doctor's garments, were varieties of expensive silk; but, though he allowed himself, probably for professional reasons, this extravagance of costume, he was exceedingly careful about his expenditure in other matters: 'he was but esy of dispence.' The 'cloke of Calabre' in Langland is one made of a kind of fur, which is supposed, without any authority, to have derived its name from Calabria. The term, which is of frequent use in old literature, is now applied to the fur of the Siberian squirrel. Whitaker, in his edition of *Piers* (p. 143), paraphrases the expression into 'cloak of Salerno,' perhaps thinking that as Calabria is in Italy the reference was to the School of Salerno.

"The doctor is represented carrying a 'urinal,' and inspecting the secretion which it contains. Urinal was the name applied to the receptacle in which the urine was placed when the physician pretended, by a mere inspection, to diagnose the complaint from which a patient was suffering. The special marks which showed that Valentine was in love were so obvious that Speed said to him: they 'shine through you like the water in an urinal, that not an eye that sees you but is a physician to comment on your malady' (*Two Gentlemen of Verona*, ii, 1, 40-3). This piece of humbug was raised to the position of a fine art, for those who practiced it would first show their ingenuity by learning indirectly what were the symptoms of the malady of the patient, and then achieve a reputation by declaring that the urine showed that the sick person had such symptoms. Not even the denunciations of Linacre, or a statute of the College of Physicians which declared that no one connected with that institution should upon such evidence prescribe for a patient whom he had not seen, could put an end to the practice which existed from at least 1230 through several centuries. Shakespeare has several references to it; on these some comments were made in the *Journal for December*, 1887.

"The physician's coat of arms and apothecary played into one another's hands, and need much comment. I surveyed long the *Journal for December*. A good illustration of it can be seen in *Boydell's Shakespeare* against the *Peace Proclamation* (1578), from which illustration was given in the *Journal for December*, 1887, from the same illustration was given in the *Journal for December*, 1887, from the same illustration was given in the *Journal for December*, 1887.

"The physician's coat of arms and apothecary played into one another's hands, and need much comment. I surveyed long the *Journal for December*. A good illustration of it can be seen in *Boydell's Shakespeare* against the *Peace Proclamation* (1578), from which illustration was given in the *Journal for December*, 1887, from the same illustration was given in the *Journal for December*, 1887, from the same illustration was given in the *Journal for December*, 1887.

fluence of the ascending stars and planets. The 'images' were the astrological designs by which the doctor represented the favorable aspect of the heavens. A drawing of one such image is given in *Good Words* for this month in an article by Sir Robert Ball on Kepler, who is a conspicuous example of a man with a scientific mind tainted with the absurdities of astrology. It might have been thought that such superstition had been outgrown now by all except the buyers of cheap almanacs, in which the pretension is made of foretelling future events; but we are told that astrologers are doing a good trade in England at the present day, and that the house of one of them 'is visited by many leading people in society, while more than one of our commercial magnates and Stock Exchange speculators seek his advice' (*Review of Reviews*, March, 1893, p. 287). Only within the last few weeks I received the prospectus of a half-guinea book, which treats of natal astrology, and which contains chapters on The Health of the Native and Diseases caused by the Planets. One of the authors of the book offers to supply 'directions' for periods from one to fifty years, at prices ranging from three shillings to five pounds. Those who assert that the world is still in its childhood verily have some justification for the statement.

"In the last line but one of the description, is probably a reference to the 'gold cure' of the middle ages. There was a widespread belief that gold taken internally would preserve youth and health, and heal all diseases. The writers of the time have many words about 'aurum potabile' and its supposed virtue. Shakespeare has one or two references to it (2 *Henry IV*, iv, 4, 161-3; *All's Well that Ends Well*, v, 3, 101-4).

"Chaucer's doctor was careful of his bodily welfare, and wisely enjoined for himself a very rigid and spare diet; but he seems to have been somewhat regardless of his spiritual growth.

"The reading which had helped the doctor to become such an excellent practitioner was extensive, and derived from most of the nations which had contributed to the literature of medicine. He would not have had much difficulty in acquiring what there was to know of the old Æsculapius, for no literature is attributed to his name, and of his doings nothing is recorded except in a few notices in Greek poetry. Although some writers believe him to have been an actual personage, he is usually regarded as the mythical son of Apollo and Coronis. His sons Machaon and Podalirius are well known, the former especially, as attending to the wounds of the combatants before Troy. Their services were highly valued. In the words of the version by one resident in Bristol:

"For more than a multitude availeth the leech for our need
When the shaft sticketh deep in the flesh, when the healing salve
must be spread'
The Bard of Homer done into English Verse. By ARTHUR W. WAY,
1877, xi, 514, 515.

The deeds attributed to Æsculapius caused his name to be highly honored. After-generations deified him and built temples in his honor. At these many wonderful cures were, of course, performed, and those who received benefit left behind them a description of their diseases, to which the priests of the temple added an account of the remedies employed. Those who practiced the healing art took their methods from these records, represented themselves to be his descendants, and for some time were known as Asclepiads.

"For some centuries medicine was largely in the hands of the philosopher, and it was not until 400 B. C. that Hippocrates became almost its first systematic practitioner. His writings were considerable and, characterized by wide powers of observation and a good style, had an enormous influence upon medical science. Several complete Greek and Latin editions of the

works attributed to him were published in the sixteenth century, and these have been often reprinted." . . .

Dioscorides was a physician of Asia Minor about the time of Nero (54-67 A. D.). He paid special attention to materia medica, on which he wrote a treatise. This and his other works dealing principally with therapeutics were printed in Greek and Latin in the fifteenth century and afterward. His editors, who have been numerous, have by their comments added much to his original writings. In the Bristol Medical Library there is a 1598 Latin copy of all his known works. The mediæval doctor, always an ardent therapist, was largely indebted to Dioscorides, who obtained an allegiance in the department of materia medica as great and lasting as did Galen in the sphere of general practice.

"Toward the end of the first century of the Christian era, Rufus of Ephesus was distinguished more as an anatomist than a doctor. His work was highly spoken of by other writers, but as only fragments of it are extant, it is not likely that Chaucer's doctor derived much assistance from it.

"In the second century there was born at Pergamum, in Asia Minor, one who was destined to have a larger influence on matters medical than any other writer before him except Hippocrates, and the magic of whose name lasted like a spell over the healing art for centuries. Even in the reign of Elizabeth it was thought rank heresy to impugn his authority. (See *The Roll of the Royal College of Physicians of London*, second edition, 1878, vol. i, p. 62.) Galenical or vegetable pharmacy was regarded almost as a sacred thing, and received no serious addition or opposition till Paracelsus, at the beginning of the sixteenth century, ventured to introduce mineral substances and chemical combinations into the materia medica. Galen was a voluminous author, and numerous large editions of his works and commentaries on them are in existence." . . .

"In the literature of the Doctor of Physic there is now a great chronological gap. In the year 792 began the reign of the Caliph Haroun Al Raschid, who, following in the steps of his predecessors in encouraging the progress of literature, commissioned Mesue, who, there is reason, from the title of one book, to believe was also known by the name of John Damascene, to translate Greek scientific works into his own language. He could not, however, have done much for the medical pilgrim to Canterbury; for, although his own works are quoted by later writers, there is, except the one book to which I have referred, nothing that can with certainty be attributed to him.

"There is much doubt as to the Serapion with whose writings Chaucer's doctor was acquainted. There was a Serapion of Alexandria whom Celsus mentions. The earlier of the two Arabian physicians of the same name lived at the beginning of the tenth century and was principally a compiler. His work found two Latin translators. The later Serapion, who had about 1079, left a work on materia medica of which Latin editions have been printed in the fifteenth and sixteenth centuries.

"There was, however, a third witness of the medical literature of the Arabian physicians. He had with him the Book of the Arabians, a collection of the prescriptions of all succeeding medical authorities of a comparatively late date, which he translated in many works, corresponding to the tenets of different sects of medicine. He is mentioned in Arabic as the translator of the prescriptions of the great physician Hippocrates, and is frequently alluded to from the end of the thirteenth century onward as the translator of the Book of the Arabians (1341). It has been used by the old English translators, and even after the original Arabic by Dr. Greenhill." . . .

They, the translators of that Arabian work, at the hands of Arabian medicine, and on account of the great learning and

wrote a comprehensive work dealing with the whole subject of medicine. It was translated into Latin in 1127, and was printed first in 1492 and again more than once in the sixteenth century.

"Avicenna, whose name is more familiar perhaps than that of any other Arabian doctor, was born in 980. In early life he achieved a great reputation for proficiency in literature and mathematics, but seems to have wasted his great abilities by frivolities of life, and in almost entirely compiling from previous writers. Yet his works, especially his *Canon Medicinæ*, had a great influence upon his successors, and were authorities in medicine till quite the middle of the seventeenth century. They were first printed in Arabic, and afterward in Latin.

"Having given so much attention to medicine as expounded by the Arabs, it was to be expected that the Chaucerian doctor would bestow some study on the writings of the man who did most to introduce Arabian medical thought and practice into Europe. Constantinus, surnamed Africanus from the fact that he was born in Carthage, who had spent much of his life in the East, became in the latter half of the eleventh century identified with the School of Salerno, which was just then rising into prominence as a center of medical teaching of university character. It exercised a long influence over medical life in general, and lived till 1811. In its corporate capacity it issued several works, the principal of which were a cyclopædia of medicine and surgery and the well-known *Schola Salernitana*, a dissertation on the preservation of health issued as a poem in Latin verse, and which enjoyed a popularity for centuries. It was first printed in 1474. Salerno is also celebrated for having produced several women doctors. Chaucer refers again to Constantine in *The Merchant's Tale*, where an old man is represented as having taken freely of aphrodisiacs:

"And many a delictory had he ful yow,
Such as the curseþ monk seith, Constantine
Hath writen in his booke of *Concord*."

Constantine's complete works were printed in Latin in 1536.

"The doctor in the *Chaucer Tales* had a great fancy for Arabian literature. Averrhoes, who added little to the store of medical knowledge, was a man of great intellectual attainments; he was more a theoretical than a practical physician. He lived in the second half of the twelfth century. Some of his medical works were translated into Latin and afterward printed; but he is principally famous for his philosophic treatises.

"Montpellier Bernard almost as famous a Salerno, as a school of medicine, and in the person of Bernard, according supplied an authority for Chaucer's companion. Bernard was teaching there from 1285 to 1307. His most famous book was *Lilium Medicinæ*. His collected works were first printed in 1487.

"The Arabian physician, who wrote the *Book of the Arabians*, had which was about the end of the thirteenth or beginning of the fourteenth century, was the first English author whose works have survived till the present day. Among them is a *Compendium of Arabic Medicine*, which was first printed in London in 1516. He is said to have derived his knowledge of medicine from the Salerno school.

"About 1190 was born a successor of the Salerno School, Roger Novus, a doctor of medicine, being the year when Chaucer had in his usual experience, as mentioned by Constantine, a physician of that name, and was a physician of the same name. He was known as being of Salerno, and lived in Montpellier, France. His famous work, in the form of a book of questions and answers, and in the form of a poem, is the *Compendium of Arabic Medicine*, which was first printed in 1516. It is probable that Roger was the same as the Roger mentioned by Constantine in the *Merchant's Tale*. About 1190 *Ughabdin* wrote the *Book of the Arabians*.

was as 24 to 1. Thus, while the most of the cases of heterophoria show hyperopic refraction as is to be expected considering the greater frequency of this condition over myopia—when the static refraction is viewed in its relation to the accompanying heterophoria, we find that hypermetropia is usually accompanied by esophoria and myopia is most frequently associated with exophoria.

"There is still to be found occasionally one who maintains the opinion that a complete tenotomy is required in every case of heterophoria calling for operation, on the assumption that no gain whatever is to be derived from partial severance of the tendon. My experience leads me to a directly opposite conclusion."

The author then referred to his first paper on this subject, written six years before, in which he had stated in effect that the fan-shaped expansions of the tendons of the recti at their insertion into the sclerotic were wider and thinner and their margins more elastic than was generally appreciated, and that the elasticity of the margins was an influential factor in the production of a relaxation of tension in the tendon, graduated and definite in amount and permanent in character, permitting the effectual central portions of the tendon to retract and form a new attachment to the globe farther back. This he desired now especially to reaffirm and to add that graduated tenotomy was practicable and effective only because of the elasticity of the margins of the tendons. No attempt was made by him to distinguish between the tendon and its immediate covering derived from Tenon's capsule, for, distinct as they were anatomically, they were one surgically, for the purposes of this operation at least, and were to be treated as one.

"It is true," he continued, "that occasionally a case is found in which no appreciable change in position occurs until complete severance has been accomplished, but such cases are altogether rare and exceptional. In the great majority of cases a gain graduated from one to eight degrees may be made with complete severance. In those exceptional cases referred to, the tendon is thick and narrow at its insertion, and the elastic margins are either deficient or absent.

"The technique of graduated tenotomy involves considerable difficulty and complication at times, and the performance of the operation is not to be looked upon as in any sense a trivial procedure. It is an altogether more delicate and difficult operation than that for strabismus, and not less so indeed than any other operation done upon the eyeball, not excepting that for cataract; but when skillfully performed, it may be expected to yield entire and satisfactory results. It can not be successfully undertaken without special instruments. These, however, by Dr. Stevens leave little to be desired. The ordinary strabismus instruments are altogether unsuitable by reason of their coarseness and clumsiness, and should never be employed.

"A study of nearly two years' following period, of a series of asthenopia coming under my care has led me to the following conclusions:

"Muscular asthenopia may present symptoms of all grades of impairment, from the slightest to the most severe.

"The muscular condition in every case should be a matter of routine, to be carefully investigated, and the results of general refraction, and magnitude of accommodation.

"A patient may, owing to muscular weakness, be the possessor of a hyperopic vision, or constant strain up to the limit of his muscular defect. It is impossible to predict with any degree of exactness the result of correction of either refractive or muscular error. As a rule, and very generally, some kind of relief is to be expected from the correction of the muscular muscularity, inasmuch as from the correction of refractive error and accommodation as might be expected from the

similarity in the symptoms which these conditions respectively cause.

"During the earlier years of my study of these cases, I gave considerable attention to the graver neuroses—especially epilepsy—in connection with muscular anomalies; continuing the observation of a series of epileptic cases throughout a period of about five years. The results obtained in this series were altogether negative, not one recovering. With expectations of cure of epilepsy greatly abated, I nevertheless consider it proper to remove eye-strain of muscular origin in this affection as I would in any other condition; and for the additional sufficient reason that sound conservatism in the management of epilepsy calls for the removal of all possible sources of peripheral irritation."

A Lunatic's Relatives.—The *Hospital* for July 28th publishes an article of which the following is the substance: Among the troubles and anxieties of an asylum doctor's life the friends of his patients may certainly be reckoned. They are of all varieties, but a considerable number are more than kin, in that they also are not wholly free from the taint of madness, and often decidedly less than kind. A husband, who brought his wife to the Morningside Asylum, Edinburgh, was obliging enough to give a hint as to the proper mode of treating the patient. He had been in the habit of thrashing her twice a week, and thought the discipline should be continued. The supersensitive relatives—the opposite of this kind husband—are, however, almost as great a nuisance. They come to the asylum weeping and trembling, bemoaning to the lunatic himself his sad condition, until they upset his composure, and cause no little extra trouble to the attendants, who are sufficiently hard worked already. Still, even these are less undesirable visitants than the drunken father who, as we are informed by Dr. Elkins, of the Edinburgh Asylum, finding his insane daughter uninterested in his conversation promptly gave her a black eye. One would be inclined to say, in the face of such instances, that a lunatic was better without visitors; but this is not so. Very few patients completely lose their own identity; a considerable number know not only who they are, but where they are, and the knowledge is a grief and a humiliation to them. These feelings are aggravated by the notion that those who once loved them, who were once their companions, have deserted them. And often enough they seem to be forgotten. Their kinsfolk bring them to the asylum, and then, glad to be rid of the incubus, never return to ask how they fare. Oftenest is this the case, sad to say, with husbands and wives; the tie of wedlock, close and permanent as it is, seems to snap at the asylum gates; and children are not too devoted to feeble-minded parents, while mothers and maiden aunts seem to be the most loyal to their insane relatives. Doubtless the visits of these devoted women are not an unmixed benefit; they are liable to unreasonable emotion, they put leading questions to the patients to make them complain, and accept their answers as undoubted truth. But, at their worst, they do less harm than those who look on the lunatic as a mere nuisance to the family.

Ichthyol in Gynecology.—Dr. M. J. S. S. of Boston contributes an article on the use of Ichthyol in Gynecology. He remarks that it is a well-known fact that the presence of the iodine of Ichthyol in aqueous solutions is very unstable. He has been experimenting with the compound in the treatment of some gynecological cases, and has found it to be very effective. He has used it in the treatment of chronic gonorrhea, and in the treatment of chronic vaginitis, with excellent and satisfactory results. He has also used it in the treatment of chronic cervicitis, and in the treatment of chronic endometritis. He has found it to be very effective in the treatment of these conditions, and he has found it to be very safe. He has used it in the treatment of these conditions, and he has found it to be very safe. He has used it in the treatment of these conditions, and he has found it to be very safe.

great analgesic power. Other investigators admit its analgesic qualities, but that it promotes absorption is as stoutly denied by some as it is maintained by others. Reitmann and Schönauer reported the most gratifying results with regard to pain in a hundred cases of inflammation. Bloch was the first to apply pure ichthyol to the endometrium, and was convinced of its resorbent as well as of its anodyne action. He noticed great improvement in cases of acute elytritis and chronic metritis with venous engorgement. That its effects were not due to the use of a glycerin solution he proved by a series of experiments with pure ichthyol, and stated his belief that the pure drug was more efficient than the glycerin solution. Kotschau employed ichthyol in fifty-six cases of endotrachelitis, also in a hundred and twenty-seven cases of endometritis, using also, in the severer cases, a preliminary curetting with the iron, massage, and douches. Although treatment with other means gives about the same proportion of cures, he regards that with ichthyol as much safer. In fifty-two cases of febrile perimetritis he employed tampons of ichthyol-glycerin with ichthyol pills and hot sitz baths, and was satisfied that this treatment produced a cure more promptly than any other, the pain being often relieved by the first application and the exudate quickly disappearing.

So far, all testimony has been favorable, the author says, but in 1891 Oberth drew the following conclusions from the study of forty-two cases: 1. The salve had absolutely no power to control pain. 2. Although the pills were usually well borne, no improvement in appetite or in general condition followed that could be ascribed to them. 3. The suppositories had a negative effect as regarded tenesmus, and they sometimes irritated the rectum. 4. Although pure ichthyol applied to the catarrhal mucosa or eroded so would often produce a cure, the results were by no means so good as those obtained by the older astringents. The only good derived from the use of the tampons, he believed, came from the glycerin they contained, and while granting a certain influence against pain, he denied absolutely any resorbent action. Other writers arrived at the same conclusions, maintaining that it should be used only symptomatically for pain, and that its intra-uterine use might be followed by severe hemorrhage.

In a number of cases of moderately acute pelvic inflammation the tampon was used, but where no operation did not seem to be indicated, Dr. Storer has employed the following method: Every third day, after carefully drying the vagina, its vault was freely painted with ichthyol-glycerin, or with pure ichthyol, followed by good massage of the abdomen, when a tampon was guarded by a dry pad. In addition to this, full hot douches were sometimes employed. In perhaps a dozen cases pills were given. No discomfort from them was noticed, except in one case, where a patient, when the pills were first taken, experienced a burning sensation in the rectum, and the pills caused more or less constipation. In all the other cases the pills were well borne, and the appetite improved, but there was no marked improvement in the general condition. In the case of a patient with a moderately acute pelvic pain, the tampon was used, and the pills were given, but the patient did not feel any improvement, and the tampon was removed after four days. In the case of a patient with a moderately acute pelvic pain, the tampon was used, and the pills were given, but the patient did not feel any improvement, and the tampon was removed after four days. In the case of a patient with a moderately acute pelvic pain, the tampon was used, and the pills were given, but the patient did not feel any improvement, and the tampon was removed after four days.

In a number of cases of moderately acute pelvic inflammation the tampon was used, but where no operation did not seem to be indicated, Dr. Storer has employed the following method: Every third day, after carefully drying the vagina, its vault was freely painted with ichthyol-glycerin, or with pure ichthyol, followed by good massage of the abdomen, when a tampon was guarded by a dry pad. In addition to this, full hot douches were sometimes employed. In perhaps a dozen cases pills were given. No discomfort from them was noticed, except in one case, where a patient, when the pills were first taken, experienced a burning sensation in the rectum, and the pills caused more or less constipation. In all the other cases the pills were well borne, and the appetite improved, but there was no marked improvement in the general condition. In the case of a patient with a moderately acute pelvic pain, the tampon was used, and the pills were given, but the patient did not feel any improvement, and the tampon was removed after four days. In the case of a patient with a moderately acute pelvic pain, the tampon was used, and the pills were given, but the patient did not feel any improvement, and the tampon was removed after four days.

from local pain and dragging was constant, and generally there was in a short time much less leucorrhœa. Of course, very many obstinate cases finally came to curetting, but the author's impression is that as many, if not more, were cured or relieved by this method than by any other treatment. He has used the salve and the pure drug in a number of cases of pruritus of the vulva and of the anus, and there was improvement, but no cure, in all. In a few cases of painful hæmorrhoids it seemed to relieve the discomfort by lessening the congestion. From what he has seen, Dr. Storer feels justified in drawing the following conclusions: 1. Although ichthyol is by no means the gynecological panacea that some observers have held it to be, still it has sufficient approved value to deserve a very high place in our list of remedies. 2. While its chief action is to relieve pain, it does possess certain resorbent qualities, which in some cases are relatively powerful. 3. Its use is unattended with danger or discomfort. 4. The pure drug is generally more satisfactory and reliable than solutions. 5. It has not yet been proved that it has any gynecological value other than as a local application.

Quackery within the Profession.—The *British Medical Journal* for July 28th contains an abstract of an address delivered at the annual meeting of the Midland Branch of the British Medical Association by Dr. J. West Walker, of London. The author referred to the characteristics of quackery in its barest and most uncompromising form, and asked whether or not it had gained an entrance within the profession. He criticised the tendency on the part of dealers to advertise proprietary preparations with an amount of elaboration which seemed to him quite uncalled for.

With regard to the attitude of consultants in the treatment of patients, the author paid a compliment to the diagnostic skill commonly shown, and admitted that assistance had often been obtained from them, but, he added, when he sent to a consultant, he invariably asked himself what novelty he should have to procure, although his surgery was well supplied with most of the established therapeutic agents. The newest mineral water, tabloid, capsule, or some drug not to be found in the Pharmacopœia, but only to be obtained from a particular chemist; these and others formed a tempting catalogue of choice novelties from which a selection might be made according to fancy.

The author made it a point of honor to carry out scrupulously the consultant's plan of treatment, but if the case was chronic, one by one his instructions were dropped, and the general management of the case fell back upon the original adviser, who had to bring into play all the skill and judgment he possessed to meet the various and varying symptoms as they arose, aided and supported by the line of right principle he had received from his professional brother. Furthermore, the patients usually returned loaded with minute instructions as to diet. Unfortunately, especially in the matter of diet, these instructions were by no means uniform. Different advisers gave different advice. The old adage that "what is one man's meat is another man's poison" seemed to be completely lost sight of, and any one whose inclination prompted him to do so could easily ride his hobby to death. Exact details as to the quantity and quality of the food, nice distinctions as to what drinks might be taken, explicit rules as to meals, exercise, and habits generally—these and similar instructions were laid down and enjoined with great exactitude, and if the patient could be induced to have faith in the doctor and obey it, and if he adhered strictly to the diet and regimen ordered for him, benefit to his health would generally follow. And, since the end was usually greater than the means, something might be said in favor of a

means which conduced to such a desirable end, even if it was somewhat irregular. Might it not be well, asked the writer, to ask and fully realize the answer to the question, How far were these good results the positive effects of what we caused our patient to do, and how far the negative effects of what we caused him not to do? The removal of some vicious habit, some worrying occupation, or unhealthy surroundings might really have been the cause of good, and our remedies only have contributed to bring about the result by an indirect method.

With regard to new remedies, Dr. Walker thought that a new drug which was really useful required little advertisement. He protested against the abuse, not the use, of advertisements; although condemning credulity, he would not favor its opposite—a dogged skepticism which, in an exact science, such as medicine, was perhaps even more harmful than credulity.

The author was highly averse to the practice of prescribing strong mixtures to be taken in doses of one or two drachms, or of so many minims. To prescribe concentrated mixtures of strychnine, of arsenic, or of mercuric perchloride, and direct them to be given in various degrees of dilution, was, he thought, a dangerous custom.

The American Association of Obstetricians and Gynecologists. The secretary asks us to make the following correction of the preliminary programme which we published in our issue for August 4th, also the subjoined additions: Under the heading of a discussion on Inflammatory Disease of the Uterus and Appendages and of the Pelvic Peritonium, the subheading, "Results—When treated under Various Methods of Treatment," should read *When not treated*. The additional headings are these: Remarks bearing on the Surgical Treatment of Intussusception in Infants, based on Two Successful Cases, by Dr. Henry Howitt, of Guelph, Ont.; The Limitations of Surgery in the Treatment of the Uterus and its Appendages, by Dr. William H. Myers, of Fort Wayne, Ind.; The Incision in Abdominal Surgery—Methods and Results, by Dr. J. H. Crites, of Detroit; Abdominal Section in Ectopic Gestation where the Fetus is Living and Viable, by Dr. N. O. Wender, of Pittsburgh; Hysterectomy for Cancer of the Uterus, by Dr. E. W. Cushing, of Boston; Chronic Progressive Atrophy of the Vulva (Kraurosis Vulvae), its Pathology and Radical Treatment, with Report of Cases, by Dr. Charles A. L. Reed, of Cincinnati; and a paper (planned to be introduced by Dr. William F. B. Turner, of Birmingham, Ala.)

The Late Professor Josef Hyrtl.—The *Wiener Klinische Wochenschrift* informs us that Professor Hyrtl's death was an unexpected one, having died at noon on the morning of July 15th, in the eighty-fourth year of his age. He was a person considerably over-endowed with intellect, and his many published works, taken from the same journal, will show:

Handbuch der Anatomie des Menschen, 1847, 1850, 1853, 1856, 1859, 1862, 1865, 1868, 1871, 1874, 1877, 1880, 1883, 1886, 1889, 1892, 1895, 1898, 1901, 1904, 1907, 1910, 1913, 1916, 1919, 1922, 1925, 1928, 1931, 1934, 1937, 1940, 1943, 1946, 1949, 1952, 1955, 1958, 1961, 1964, 1967, 1970, 1973, 1976, 1979, 1982, 1985, 1988, 1991, 1994, 1997, 2000, 2003, 2006, 2009, 2012, 2015, 2018, 2021, 2024, 2027, 2030, 2033, 2036, 2039, 2042, 2045, 2048, 2051, 2054, 2057, 2060, 2063, 2066, 2069, 2072, 2075, 2078, 2081, 2084, 2087, 2090, 2093, 2096, 2099, 2102, 2105, 2108, 2111, 2114, 2117, 2120, 2123, 2126, 2129, 2132, 2135, 2138, 2141, 2144, 2147, 2150, 2153, 2156, 2159, 2162, 2165, 2168, 2171, 2174, 2177, 2180, 2183, 2186, 2189, 2192, 2195, 2198, 2201, 2204, 2207, 2210, 2213, 2216, 2219, 2222, 2225, 2228, 2231, 2234, 2237, 2240, 2243, 2246, 2249, 2252, 2255, 2258, 2261, 2264, 2267, 2270, 2273, 2276, 2279, 2282, 2285, 2288, 2291, 2294, 2297, 2300, 2303, 2306, 2309, 2312, 2315, 2318, 2321, 2324, 2327, 2330, 2333, 2336, 2339, 2342, 2345, 2348, 2351, 2354, 2357, 2360, 2363, 2366, 2369, 2372, 2375, 2378, 2381, 2384, 2387, 2390, 2393, 2396, 2399, 2402, 2405, 2408, 2411, 2414, 2417, 2420, 2423, 2426, 2429, 2432, 2435, 2438, 2441, 2444, 2447, 2450, 2453, 2456, 2459, 2462, 2465, 2468, 2471, 2474, 2477, 2480, 2483, 2486, 2489, 2492, 2495, 2498, 2501, 2504, 2507, 2510, 2513, 2516, 2519, 2522, 2525, 2528, 2531, 2534, 2537, 2540, 2543, 2546, 2549, 2552, 2555, 2558, 2561, 2564, 2567, 2570, 2573, 2576, 2579, 2582, 2585, 2588, 2591, 2594, 2597, 2600, 2603, 2606, 2609, 2612, 2615, 2618, 2621, 2624, 2627, 2630, 2633, 2636, 2639, 2642, 2645, 2648, 2651, 2654, 2657, 2660, 2663, 2666, 2669, 2672, 2675, 2678, 2681, 2684, 2687, 2690, 2693, 2696, 2699, 2702, 2705, 2708, 2711, 2714, 2717, 2720, 2723, 2726, 2729, 2732, 2735, 2738, 2741, 2744, 2747, 2750, 2753, 2756, 2759, 2762, 2765, 2768, 2771, 2774, 2777, 2780, 2783, 2786, 2789, 2792, 2795, 2798, 2801, 2804, 2807, 2810, 2813, 2816, 2819, 2822, 2825, 2828, 2831, 2834, 2837, 2840, 2843, 2846, 2849, 2852, 2855, 2858, 2861, 2864, 2867, 2870, 2873, 2876, 2879, 2882, 2885, 2888, 2891, 2894, 2897, 2900, 2903, 2906, 2909, 2912, 2915, 2918, 2921, 2924, 2927, 2930, 2933, 2936, 2939, 2942, 2945, 2948, 2951, 2954, 2957, 2960, 2963, 2966, 2969, 2972, 2975, 2978, 2981, 2984, 2987, 2990, 2993, 2996, 2999, 3002, 3005, 3008, 3011, 3014, 3017, 3020, 3023, 3026, 3029, 3032, 3035, 3038, 3041, 3044, 3047, 3050, 3053, 3056, 3059, 3062, 3065, 3068, 3071, 3074, 3077, 3080, 3083, 3086, 3089, 3092, 3095, 3098, 3101, 3104, 3107, 3110, 3113, 3116, 3119, 3122, 3125, 3128, 3131, 3134, 3137, 3140, 3143, 3146, 3149, 3152, 3155, 3158, 3161, 3164, 3167, 3170, 3173, 3176, 3179, 3182, 3185, 3188, 3191, 3194, 3197, 3200, 3203, 3206, 3209, 3212, 3215, 3218, 3221, 3224, 3227, 3230, 3233, 3236, 3239, 3242, 3245, 3248, 3251, 3254, 3257, 3260, 3263, 3266, 3269, 3272, 3275, 3278, 3281, 3284, 3287, 3290, 3293, 3296, 3299, 3302, 3305, 3308, 3311, 3314, 3317, 3320, 3323, 3326, 3329, 3332, 3335, 3338, 3341, 3344, 3347, 3350, 3353, 3356, 3359, 3362, 3365, 3368, 3371, 3374, 3377, 3380, 3383, 3386, 3389, 3392, 3395, 3398, 3401, 3404, 3407, 3410, 3413, 3416, 3419, 3422, 3425, 3428, 3431, 3434, 3437, 3440, 3443, 3446, 3449, 3452, 3455, 3458, 3461, 3464, 3467, 3470, 3473, 3476, 3479, 3482, 3485, 3488, 3491, 3494, 3497, 3500, 3503, 3506, 3509, 3512, 3515, 3518, 3521, 3524, 3527, 3530, 3533, 3536, 3539, 3542, 3545, 3548, 3551, 3554, 3557, 3560, 3563, 3566, 3569, 3572, 3575, 3578, 3581, 3584, 3587, 3590, 3593, 3596, 3599, 3602, 3605, 3608, 3611, 3614, 3617, 3620, 3623, 3626, 3629, 3632, 3635, 3638, 3641, 3644, 3647, 3650, 3653, 3656, 3659, 3662, 3665, 3668, 3671, 3674, 3677, 3680, 3683, 3686, 3689, 3692, 3695, 3698, 3701, 3704, 3707, 3710, 3713, 3716, 3719, 3722, 3725, 3728, 3731, 3734, 3737, 3740, 3743, 3746, 3749, 3752, 3755, 3758, 3761, 3764, 3767, 3770, 3773, 3776, 3779, 3782, 3785, 3788, 3791, 3794, 3797, 3800, 3803, 3806, 3809, 3812, 3815, 3818, 3821, 3824, 3827, 3830, 3833, 3836, 3839, 3842, 3845, 3848, 3851, 3854, 3857, 3860, 3863, 3866, 3869, 3872, 3875, 3878, 3881, 3884, 3887, 3890, 3893, 3896, 3899, 3902, 3905, 3908, 3911, 3914, 3917, 3920, 3923, 3926, 3929, 3932, 3935, 3938, 3941, 3944, 3947, 3950, 3953, 3956, 3959, 3962, 3965, 3968, 3971, 3974, 3977, 3980, 3983, 3986, 3989, 3992, 3995, 3998, 4001, 4004, 4007, 4010, 4013, 4016, 4019, 4022, 4025, 4028, 4031, 4034, 4037, 4040, 4043, 4046, 4049, 4052, 4055, 4058, 4061, 4064, 4067, 4070, 4073, 4076, 4079, 4082, 4085, 4088, 4091, 4094, 4097, 4100, 4103, 4106, 4109, 4112, 4115, 4118, 4121, 4124, 4127, 4130, 4133, 4136, 4139, 4142, 4145, 4148, 4151, 4154, 4157, 4160, 4163, 4166, 4169, 4172, 4175, 4178, 4181, 4184, 4187, 4190, 4193, 4196, 4199, 4202, 4205, 4208, 4211, 4214, 4217, 4220, 4223, 4226, 4229, 4232, 4235, 4238, 4241, 4244, 4247, 4250, 4253, 4256, 4259, 4262, 4265, 4268, 4271, 4274, 4277, 4280, 4283, 4286, 4289, 4292, 4295, 4298, 4301, 4304, 4307, 4310, 4313, 4316, 4319, 4322, 4325, 4328, 4331, 4334, 4337, 4340, 4343, 4346, 4349, 4352, 4355, 4358, 4361, 4364, 4367, 4370, 4373, 4376, 4379, 4382, 4385, 4388, 4391, 4394, 4397, 4400, 4403, 4406, 4409, 4412, 4415, 4418, 4421, 4424, 4427, 4430, 4433, 4436, 4439, 4442, 4445, 4448, 4451, 4454, 4457, 4460, 4463, 4466, 4469, 4472, 4475, 4478, 4481, 4484, 4487, 4490, 4493, 4496, 4499, 4502, 4505, 4508, 4511, 4514, 4517, 4520, 4523, 4526, 4529, 4532, 4535, 4538, 4541, 4544, 4547, 4550, 4553, 4556, 4559, 4562, 4565, 4568, 4571, 4574, 4577, 4580, 4583, 4586, 4589, 4592, 4595, 4598, 4601, 4604, 4607, 4610, 4613, 4616, 4619, 4622, 4625, 4628, 4631, 4634, 4637, 4640, 4643, 4646, 4649, 4652, 4655, 4658, 4661, 4664, 4667, 4670, 4673, 4676, 4679, 4682, 4685, 4688, 4691, 4694, 4697, 4700, 4703, 4706, 4709, 4712, 4715, 4718, 4721, 4724, 4727, 4730, 4733, 4736, 4739, 4742, 4745, 4748, 4751, 4754, 4757, 4760, 4763, 4766, 4769, 4772, 4775, 4778, 4781, 4784, 4787, 4790, 4793, 4796, 4799, 4802, 4805, 4808, 4811, 4814, 4817, 4820, 4823, 4826, 4829, 4832, 4835, 4838, 4841, 4844, 4847, 4850, 4853, 4856, 4859, 4862, 4865, 4868, 4871, 4874, 4877, 4880, 4883, 4886, 4889, 4892, 4895, 4898, 4901, 4904, 4907, 4910, 4913, 4916, 4919, 4922, 4925, 4928, 4931, 4934, 4937, 4940, 4943, 4946, 4949, 4952, 4955, 4958, 4961, 4964, 4967, 4970, 4973, 4976, 4979, 4982, 4985, 4988, 4991, 4994, 4997, 5000, 5003, 5006, 5009, 5012, 5015, 5018, 5021, 5024, 5027, 5030, 5033, 5036, 5039, 5042, 5045, 5048, 5051, 5054, 5057, 5060, 5063, 5066, 5069, 5072, 5075, 5078, 5081, 5084, 5087, 5090, 5093, 5096, 5099, 5102, 5105, 5108, 5111, 5114, 5117, 5120, 5123, 5126, 5129, 5132, 5135, 5138, 5141, 5144, 5147, 5150, 5153, 5156, 5159, 5162, 5165, 5168, 5171, 5174, 5177, 5180, 5183, 5186, 5189, 5192, 5195, 5198, 5201, 5204, 5207, 5210, 5213, 5216, 5219, 5222, 5225, 5228, 5231, 5234, 5237, 5240, 5243, 5246, 5249, 5252, 5255, 5258, 5261, 5264, 5267, 5270, 5273, 5276, 5279, 5282, 5285, 5288, 5291, 5294, 5297, 5300, 5303, 5306, 5309, 5312, 5315, 5318, 5321, 5324, 5327, 5330, 5333, 5336, 5339, 5342, 5345, 5348, 5351, 5354, 5357, 5360, 5363, 5366, 5369, 5372, 5375, 5378, 5381, 5384, 5387, 5390, 5393, 5396, 5399, 5402, 5405, 5408, 5411, 5414, 5417, 5420, 5423, 5426, 5429, 5432, 5435, 5438, 5441, 5444, 5447, 5450, 5453, 5456, 5459, 5462, 5465, 5468, 5471, 5474, 5477, 5480, 5483, 5486, 5489, 5492, 5495, 5498, 5501, 5504, 5507, 5510, 5513, 5516, 5519, 5522, 5525, 5528, 5531, 5534, 5537, 5540, 5543, 5546, 5549, 5552, 5555, 5558, 5561, 5564, 5567, 5570, 5573, 5576, 5579, 5582, 5585, 5588, 5591, 5594, 5597, 5600, 5603, 5606, 5609, 5612, 5615, 5618, 5621, 5624, 5627, 5630, 5633, 5636, 5639, 5642, 5645, 5648, 5651, 5654, 5657, 5660, 5663, 5666, 5669, 5672, 5675, 5678, 5681, 5684, 5687, 5690, 5693, 5696, 5699, 5702, 5705, 5708, 5711, 5714, 5717, 5720, 5723, 5726, 5729, 5732, 5735, 5738, 5741, 5744, 5747, 5750, 5753, 5756, 5759, 5762, 5765, 5768, 5771, 5774, 5777, 5780, 5783, 5786, 5789, 5792, 5795, 5798, 5801, 5804, 5807, 5810, 5813, 5816, 5819, 5822, 5825, 5828, 5831, 5834, 5837, 5840, 5843, 5846, 5849, 5852, 5855, 5858, 5861, 5864, 5867, 5870, 5873, 5876, 5879, 5882, 5885, 5888, 5891, 5894, 5897, 5900, 5903, 5906, 5909, 5912, 5915, 5918, 5921, 5924, 5927, 5930, 5933, 5936, 5939, 5942, 5945, 5948, 5951, 5954, 5957, 5960, 5963, 5966, 5969, 5972, 5975, 5978, 5981, 5984, 5987, 5990, 5993, 5996, 5999, 6002, 6005, 6008, 6011, 6014, 6017, 6020, 6023, 6026, 6029, 6032, 6035, 6038, 6041, 6044, 6047, 6050, 6053, 6056, 6059, 6062, 6065, 6068, 6071, 6074, 6077, 6080, 6083, 6086, 6089, 6092, 6095, 6098, 6101, 6104, 6107, 6110, 6113, 6116, 6119, 6122, 6125, 6128, 6131, 6134, 6137, 6140, 6143, 6146, 6149, 6152, 6155, 6158, 6161, 6164, 6167, 6170, 6173, 6176, 6179, 6182, 6185, 6188, 6191, 6194, 6197, 6200, 6203, 6206, 6209, 6212, 6215, 6218, 6221, 6224, 6227, 6230, 6233, 6236, 6239, 6242, 6245, 6248, 6251, 6254, 6257, 6260, 6263, 6266, 6269, 6272, 6275, 6278, 6281, 6284, 6287, 6290, 6293, 6296, 6299, 6302, 6305, 6308, 6311, 6314, 6317, 6320, 6323, 6326, 6329, 6332, 6335, 6338, 6341, 6344, 6347, 6350, 6353, 6356, 6359, 6362, 6365, 6368, 6371, 6374, 6377, 6380, 6383, 6386, 6389, 6392, 6395, 6398, 6401, 6404, 6407, 6410, 6413, 6416, 6419, 6422, 6425, 6428, 6431, 6434, 6437, 6440, 6443, 6446, 6449, 6452, 6455, 6458, 6461, 6464, 6467, 6470, 6473, 6476, 6479, 6482, 6485, 6488, 6491, 6494, 6497, 6500, 6503, 6506, 6509, 6512, 6515, 6518, 6521, 6524, 6527, 6530, 6533, 6536, 6539, 6542, 6545, 6548, 6551, 6554, 6557, 6560, 6563, 6566, 6569, 6572, 6575, 6578, 6581, 6584, 6587, 6590, 6593, 6596, 6599, 6602, 6605, 6608, 6611, 6614, 6617, 6620, 6623, 6626, 6629, 6632, 6635, 6638, 6641, 6644, 6647, 6650, 6653, 6656, 6659, 6662, 6665, 6668, 6671, 6674, 6677, 6680, 6683, 6686, 6689, 6692, 6695, 6698, 6701, 6704, 6707, 6710, 6713, 6716, 6719, 6722, 6725, 6728, 6731, 6734, 6737, 6740, 6743, 6746, 6749, 6752, 6755, 6758, 6761, 6764, 6767, 6770, 6773, 6776, 6779, 6782, 6785, 6788, 6791, 6794, 6797, 6800, 6803, 6806, 6809, 6812, 6815, 6818, 6821, 6824, 6827, 6830, 6833, 6836, 6839, 6842, 6845, 6848, 6851, 6854, 6857, 6860, 6863, 6866, 6869, 6872, 6875, 6878, 6881, 6884, 6887, 6890, 6893, 6896, 6899, 6902, 6905, 6908, 6911, 6914, 6917, 6920, 6923, 6926, 6929, 6932, 6935, 6938, 6941, 6944, 6947, 6950, 6953, 6956, 6959, 6962, 6965, 6968, 6971, 6974, 6977, 6980, 6983, 6986, 6989, 6992, 6995, 6998, 7001, 7004, 7007, 7010, 7013, 7016, 7019, 7022, 7025, 7028, 7031, 7034, 7037, 7040, 7043, 7046, 7049, 7052, 7055, 7058, 7061, 7064, 7067, 7070, 7073, 7076, 7079, 7082, 7085, 7088, 7091, 7094, 7097, 7100, 7103, 7106, 7109, 7112, 7115, 7118, 7121, 7124, 7127, 7130, 7133, 7136, 7139, 7142, 7145, 7148, 7151, 7154, 7157, 7160, 7163, 7166, 7169, 7172, 7175, 7178, 7181, 7184, 7187, 7190, 7193, 7196, 7199, 7202, 7205, 7208, 7211, 7214, 7217, 7220, 7223, 7226, 7229, 7232, 7235, 7238, 7241, 7244, 7247, 7250, 7253, 7256, 7259, 7262, 7265, 7268, 7271, 7274, 7277, 7280, 7283, 7286, 7289, 7292, 7295, 7298, 7301, 7304, 7307, 7310, 7313, 7316, 7319, 7322, 7325, 7328, 7331, 7334, 7337, 7340, 7343, 7346, 7349, 7352, 7355, 7358, 7361, 7364, 7367, 7370, 7373, 7376, 7379, 7382, 7385, 7388, 7391, 7394, 7397, 7400, 7403, 7406, 7409, 7412, 7415, 7418, 7421, 7424, 7427, 7430, 7433, 7436, 7439, 7442, 7445, 7448, 7451, 7454, 7457, 7460, 7463, 7466, 7469, 7472, 7475, 7478, 7481, 7484, 7487, 7490, 7493, 7496, 7499, 7502, 7505, 7508, 7511, 7514, 7517, 7520, 7523, 7526, 7529, 7532, 7535, 7538, 7541, 7

Lectures and Addresses.

THE RELATIVE IMPORTANCE OF
PATHOLOGY IN THE MEDICAL CURRICULUM.

THE ADDRESS OF
THE PRESIDENT OF THE ASSOCIATION OF MEDICAL EDUCATORS
GIVEN BEFORE THE DISTRICT MEDICAL ASSOCIATION, ALBANY,
April 1, 1894.

By ALLEN J. SMITH, M. D.,

PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF TEXAS, AND SURGEON-GENERAL.

MR. PRESIDENT AND GENTLEMEN OF THE ASSOCIATION: The circumstances of the establishment of this section in microscopy and pathology at the last annual session of the association held in the city where has been recently located the school of medicine of your State, and the courtesy manifested toward that school by your nomination of the officers of the new section from its staff of teachers, leave no room for doubt of the kindly attitude of the association to the medical department of the University of Texas. Realizing this generous compliment, I can not without discourtesy to the association refrain from acknowledgment and expression of our appreciation, and I believe that I can in no wise better formally inaugurate the proceedings of the section in pathology than by devoting introductory remarks to an announcement of the views which, as teacher of pathology in your medical school, I hold as to the relative importance of pathology in the curriculum of medical studies, and in particular the scheme of instruction adopted in the school of pathology.

The study of medicine includes three easily recognized groups of subjects: (a) the preliminary branches, as anatomy, physiology, and chemistry; (b) the study of the development and cause of disease and the changes of structure and alterations of function met in disease—the principles of medicine or pathology; and (c) the study of the application of these principles to the recognition and treatment of disease—the practice of medicine or of surgery in their different phases. Pathology, thus naturally assuming the mediate ground between biology and the practice of medicine, connecting the knowledge of the normal body with the knowledge of the human organism, characterizes the study of medicine as the study of the typical individual as a human individual. It forms the basis of the science in which, as teachers, we must distinguish the practice of medicine. In its own position, pathology is the science of disease, of whatever nature, and of its treatment, and deals with the cause and development of disease, and with the functional and structural alterations caused by disease. It is not therefore, usually, as we speak strictly, many branches which are ordinarily distinguished among other arguments of a medical school from that of pathology. Were every degree of progress in the study of the association produced by the same attention to the study of the study of disease, it is to be asked, how is anything more to be predicted of those concerned in efforts having reference to the study of things, as we are presented therewith. In the study of the human organism,

cal alterations met in the body in disease, the whole study of pathological or medical chemistry, has been properly included with the general study of chemistry; the entire medical scope of medical jurisprudence falls legitimately within the limits of pathology; and just as the tubercular joint, the fractured bone, the gunshot wound, and the bullet that produced the wound, just as the cancer of the liver, the contracted kidney, find their appropriate places in the pathological museum, so too in the study of these abnormalities the altered physiology of the diseased organ or body be looked upon as properly a pathological study. Thus in fact, and thus only, can the study of symptoms, their relation with the disease which produces them, their significance as to diagnosis and prognosis—thus only can the *rationale* of the malady be regarded as legitimately a branch of pathology. In its fullest and truest significance, then, pathology is to be defined as the theory and science of medicine, to the understanding of which the study of the normal structure and function is requisite, and to which must be added the art of medical practice, that the full scope of medicine may be included.

While, of course, naturally and properly, it is impossible that the teaching of all medical science should emanate from the chair of pathology in a medical curriculum, than which in this day of development and specialism no claim can be more absurd, yet it is to be expected that pathological teaching shall, on the one hand, maintain clearly and fully the relations which disease bears to the normal bodily condition, and, on the other, as competently as the state of science permits, shall expound the altered modes of function of the diseased organ, the external manifestations of these altered functions, and the influences such changes bear to the other organs and functions and to the general welfare of the body. This is pathology, and the more strongly this view of its importance can be impressed, the clearer the idea of its significance as the basis and pillars of medical knowledge established in the mind of the student, the more value will there accrue to him from its study. He who would assume the responsibilities of medical practice without definite ideas as to the science upon which his practice must be founded is a very machine. Unfortunately, such an impression of pathology has not been the usual one given in medical schools in this country; its teaching has been left almost entirely to the practical chairs, and the necessarily cursory reviews so often given of the pathology of the affections treated of have served to make the impression of the science of medicine the student the foundations for his medical reasonings, and have left him at the close of his medical-student days not a reasoning and intelligent physician ready to appreciate the varied relations and influences of the affections he met in clinical cases, to say these things, as we do, pathology, as within this study, making possible the study of the science of medicine. The teacher of pathology who might be expected to apply certain prescriptions to certain cases, or to make certain decisions as to the body's formulæ. Nor is it safe to assume because as a student of medicine, that the study of the human organism,

experimental attention and popularity because of the difficulty of demonstration and proof of its principles and details, has had but comparatively slow growth and has never received half the attention from teachers of pathology that its great practical worth demands. It is this branch—pathological physiology—concerned with the reasons for and the manner of development of symptoms, the outward indications of altered functions, with the influences which disease in one part bears to the workings of the rest of the system: it is this which is the common domain of pathology: it is the meat of the fruit: it is the pathology of living beings; it is that part of pathology the appreciation of which makes of a man an intelligent practitioner of medicine, and the ignorance of which makes of him the routine follower of other men's methods. This I deem the proper end in which pathological teaching should culminate, for which all the training in morbid anatomy and in every branch of etiology is preparatory, and by which the problems of clinical medicine will eventually be solved. It is bound indissolubly with the studies of pathological anatomy, chemistry, and etiology, and, that it may be intelligently known, presupposes a thorough acquaintance with these elementary portions of the subject. A clinician whose clinical practice, study, and methods of instruction do not include the anatomical, chemical, and etiological features of the affections he approaches, can be regarded only in the light of an empiric, blind to the signs of the road by which he travels. The man who has studied pathology only in its aspects of bacteriology and microscopic and gross morbid anatomy might serve well as a coroner, might act as a capable assistant to a chair of pathology, but until he has grasped the full import of his subject can not with propriety be trusted to teach pathology as a science. It seems to me, however, that the only way to do this is to allow one of its constituent branches to represent the whole in its entirety, and to teach the subject. It is a common mistake. Medical students must be educated not merely as autopsy makers, but as those who have problems to work out in the living body; and their work in pathological anatomy and bacteriology and in the theoretical laboratory should be held only as means to an end, and as introductions to the philosophy of disease with which their life work ever deals. This, gentlemen, is my view of the course of the branches of pathology, and no course or curriculum which does not acknowledge and attempt to reach, as I have indicated can fulfill the best purpose for which it was created. We have no right to teach bacteriology in the isolation, relative or absolute, of the separate important subjects that are also treated in etiology, or in the relation, relative or absolute, of proper instruction in pathological anatomy. We have no right to exempt the study of gross and minute morbid anatomy from which should be equally spent upon the questions of the causation of the event and neither of these, by rights may be pursued in the isolation of consideration of the problems of pathological physiology. But proper that the student be taught the nature of the various organisms which may be causative of disease, and that it is equally right that he be instructed as to the gross and histological changes which

eventually wrought in the affected valve when the acute process is over and done; but at least as much effort should be expended that he may be led to comprehend how these changes make known their presence, why they are bound eventually to end in cardiac hypertrophy and in degeneration, how these subsequent alterations must indicate their existence, how and why such modifications in the heart must induce changes in the vascular system, in the lungs, in the liver, in the spleen and kidneys—in short, all over the body—and how he shall estimate the rapidity of the progression of these alterations as well as to what termination he must look. I had rather teach one man to follow such a line of reasoning than to educate a hundred experts in bacteriology or pathological histology who have no further conception of the subject, yet are expected to recognize and treat disease as practitioners of medicine. I feel and speak strongly upon this subject, for I verily believe the claim expressed by many a student that the time put upon pathology, as it is commonly taught, is little better than time wasted, is not a preposterous claim by any means.

At this point I desire to express my objection in unhesitating terms—although I am aware that I am addressing men as impotent in the matter as myself—to the serious mistakes into which the committee on formulation of a curriculum for the Association of American Medical Colleges has fallen. This committee, composed of some of the best-known educators in the American profession, has arranged a schedule which is to represent the least amount of instruction which will be accepted as sufficient in colleges of the association (which includes by far the greater number of the reputable medical schools of the country) when the new four-years curriculum is established. I object to a number of items, but I can with relevancy call your attention to but one or two of the discrepancies which have been proposed. I refer especially to the relative amounts of time to be given to pathology and bacteriology, both by lecture and laboratory instruction, and incidentally call your attention to the fact that the amount of clinical teaching is left entirely to the discretion or necessity of the respective schools, no number of hours being exacted by the schedule as prepared by these gentlemen. According to the views of this committee, there should be directed to bacteriology, first, five hours, then, as a hundred and fifty hours of laboratory work by each student, a total of a hundred and seventy hours in pathology, fifty hours of lecture attendance and a hundred hours of laboratory work, a total of a hundred and fifty hours, compared with one hundred by twenty-five hours per hour per week for one term) than that required for the study of a sufficient quantity of the subject. If I have not been an instance of the familiar simile of the tail wagging the dog, I am sure of a fairly good one. If the aim of the medical school that the education of a man in the various details of bacteriology, although a fine science, is a small part of the preparation to accomplish the purpose of the medical education, it is equally right that he be instructed as to the gross and histological changes which

actively bacteriological investigations in their life, it would be a greater proportion than is usual in this country, and such a proportion would probably be quite able to perform all the bacteriological work for the rest of the profession and more than fill the proper ratio of this country among the bacteriologists of the world; for, calculated upon such a basis, there would be annually added to the list of those engaged in bacteriological work in the United States from thirty to forty new men. The other ninety-eight per cent. of the class must look forward to active medical practice if they are to remain within the profession; these men will never, beyond perhaps the staining of tubercle bacilli in the sputum and the demonstration of a few other micro organisms for diagnostic purposes, do a single stroke in bacteriology, no matter how well they may have been instructed. To force these men to devote a hundred and seventy-five hours to work upon a subject for which they will never have active use beyond the appreciation of its principles, in order that two other men may be thoroughly trained in the details of the subject, is a gross misuse of time and an injustice to the majority. Provision should always be made, I hold, for the advanced work which is necessary to the proper training of the competent bacteriologist; but the general class of students should not receive more than the general principles, with just enough practice in the subject to impress these principles. This should be accomplished easily in twenty-five lectures and the same number of laboratory hours—less than one third the time advised by the medical college association. This practical work should include the preparation of various nutrient media, the staining of bacteria by a few of the most reliable methods, sterilization and the preservation of cleanliness, inoculation of tubes with a few picked forms of bacteria, inoculation of animals and observation from time to time of the results, the examination and recognition in tubes and under the microscope of the important pathogenic bacteria, and demonstration of special work, as the examination of water, air, and the detection of cholera, diphtheria, typhoid-fever, and other germs—all this carried out under the guidance and assistance of a competent demonstrator who shall confine the work as necessary during the absence of the class. If the intervals are properly arranged, this amount of matter can easily be covered in twenty-five hours. I speak after due consideration when I assert that more time than this devoted to our general classes is nearly lost. I can not find the mention of a certain gentleman, one of the members of the New American Medical Congress, who, in the most patronizing manner, as an assistant in one of the larger medical schools, I believe, assured the

sexual influences, age, heredity, and a host of other predisposing causes, as well as the poisons and the animal micro-organisms which within the past few years have attracted so much attention. Modern medicine has been full of fads and fashions, and bacteriology has become a fad. In its place it must be insisted upon as an important part of pathology; but its present claim to undue prominence in pathological teaching is unfortunate and the result of misdirected zeal.

Of the allotment of but fifty hours' lecture and a hundred hours' laboratory work to the teaching of pathology in general in the four-years curriculum I care to add no more to what I have already said than to express my regrets for its utter inefficiency and to say that with the three-years course of seven months and a half each, now maintained in the medical school of the University of Texas, I find considerably more than twice that time quite too little, and hope with the establishment of the four-years course to triple it with advantage to my classes. The matter is really beneath discussion when brought to the plane set by this committee.

It was at first my purpose, gentlemen, to devote a part of my remarks to the recent advances in the different departments of pathology, but the length to which my address has already grown and the fact of my reappointment as chairman of the section for the ensuing year induce me to withdraw that portion of the subject; and with a brief presentation of the course in pathology in the medical college of your State, arranged in accordance with the views I have expressed, I shall conclude. Becoming associated with its faculty at the inception of the school, I was fortunate in being permitted to name my chair as I deemed proper, and it therefore bears the name of the professorship of pathology, not of bacteriology, histology, and pathology, not of general pathology and morbid anatomy—but of pathology, without any limitations. Modeled after the excellent work on general pathology written by the late Professor Wagner, the instruction of the first year first includes in about twenty-four or twenty-five lectures a certain amount of elementary matter and definitions, the classification of disease, and the predisposing causes of disease; this is followed by sixteen or eighteen lectures upon the principles of bacteriology, with demonstration of the important methods of the study and exhibition of various forms of bacteria both in their naked-eye growth and under the microscope, the practical work of the student being postponed until the third year because of the general unfitness of a beginner to handle such delicate matters. The whole subject of bacteriology might with reason be postponed to the latter part of the student's course were not a certain amount of knowledge necessary to his comprehension of many of the pathological problems in medicine and surgery in the clinical and lecture teachings of the second and third years, and were it not that by including the subject in the same group of lectures with the other elementary subjects, the relative position of the study may be the better maintained. In the remaining fourteen or fifteen lectures of the first year the animal parasites and infusorians are considered, an amount of attention by

certainly quiet delirium, awaken latent nervous energy, and stimulate capillary circulation over the surface of the body.

While these effects are customary according to those who have made frequent use of cold tubs in the treatment of croupous pneumonia, I must confess that until lately I have been very doubtful as to their beneficial action. More than once I have seen bad rather than good results follow immersion. The patient has become more cyanosed, dyspnea more marked, and if anything the pulmonary congestion more intense. I am inclined to believe that sponging is a decidedly wiser method than the tub baths in many cases if it be combined, too, with friction to help improve the patient's condition through its combined action in lowering temperature slightly and in increasing nervous energy.

I am especially indebted to Dr. J. Nelson Teeter, House Physician of the Third Medical Division, Bellevue Hospital, New York, for the privilege of seeing several cases treated with cool bed baths. The results by this means, obtained in the wards of Dr. A. A. Smith and Dr. Hermann M. Biggs, have been very satisfactory, and particularly so when compared, as I am informed, with the other modes of treatment employed at the same time and on the same class of patients. The advantages of the bed baths are the avoidance of moving and shock and the ease with which they can be given. The bed is simply covered with a rubber cloth extending well over the sides and foot of the bed. Underneath it and around the margin of the cloth a rolled blanket is placed so as to form a sort of trough in which the patient lies while some water is poured into it and the sponging of the whole surface of the body conducted. The temperature of the water is lowered or raised with ice or hot water as may be desirable. The bath lasts from fifteen to thirty minutes, and is repeated whenever the temperature exceeds 103° F. The chilly sensations after the bath are moderate and easily subdued with stimulation and a hot-water bag to the feet. The patient expresses relief from the bath, his pulse becomes stronger, and the nervous manifestations less pronounced. The temperature within an hour subsequent to the bath falls one or two degrees. No complications have occurred which could fairly be attributed to the bed tub bath. As there is no lifting or immersion of the entire body of the patient, one can see that it is not these last, undoubtedly when repeated, and especially during winter, that so far have been considered as the best of all means of lowering the temperature in cases of croupous pneumonia.

At my father's bedside I observed the application to the chest and face of a mixture of the essential oils of eucalyptus, menthol, and camphor, and the use of a hot-water bag to the feet, and the patient's condition improved. The temperature fell, the pulse became stronger, and the patient expressed relief. The temperature within an hour subsequent to the bath falls one or two degrees. No complications have occurred which could fairly be attributed to the bed tub bath.

to act mainly by reducing the tension of the radial pulse and lessening the number of heart beats, while it diminishes their strength by its paralyzing effect on the ganglia and nerves controlling cardiac contractions. This poisonous effect of aconite upon the heart through its motor ganglia may be shown by direct applications of the drug. As a result of these, the heart is slowed in a very threatening manner, and may stop in diastole.

According to the researches of Ringer and Murrell, aconite paralyzes all nitrogenous tissues, and it is in this way that the heart beats are retarded. Aconitine is an extremely virulent poison, and, according to some authors, more powerful even than hydrocyanic acid. It is scarcely adapted to internal use, as even a fiftieth of a grain has produced alarming results.*

Patten states that the primary stimulation which aconite produces upon the vagus center in the medulla slows the heart-rate at first, but its depressant action upon the motor cardiac centers and the vagus end organs in the heart is soon manifested, and the heart-rate becomes very rapid.† The primary stimulation of the heart is not only quickly effected, but is also produced by very small doses. If the drug is continued or given in large doses, the vasomotor centers become gradually paralyzed, the blood pressure falls greatly, and the pulse is exceedingly weak and irregular. "Great muscular weakness and dyspnea occur, the respiration being slow, shallow, and feeble. The dyspnea, and probably the weakness also, depend to a considerable extent upon the feebleness of the circulation and consequent imperfect nutrition of the nervous centers.‡

As regards its use in pneumonia, Phillips* states that within a few days he has noticed both reduction of temperature and pulse, and believes that it controls and removes the tendency to extension of the congestion. On the other hand, Dr. Wilson Fox did not find that it had any effect on the temperature. For my part, I do not believe that its action is desirable in the treatment of croupous pneumonia where the pulmonary congestion even of the other lung is often so considerable, and where we have to dread so frequently the gradual or rapid giving out of heart power. In this connection I am glad to quote the following from Dr. Powell:

"We can frequently only conjecture the cause of the pyrexia in the early hours of pneumonia, and considering the nature and peculiar danger in the later stages of pneumonia, perhaps the worst treatment of this symptom is that very generally adopted—viz., the administration of aconite. The favorable issue of the disease usually turns upon the maintenance of heart power and vessel tonicity, both of which are lowered by aconite at the very outset, sometimes beyond recall, as has happened in cases that have come within my experience."

On the other hand, the effect of aconite is lessened or neutralized by emetics and frequent use of digitaline and

* *Practical Therapeutics*, p. 100.

† *Practical Therapeutics*, p. 100.

‡ *Practical Therapeutics*, p. 100.

* *Practical Therapeutics*, p. 100.

strychnine; and yet I can not believe, even with the neutralizing effect of these drugs, that aconite in a disease of the type of croupous pneumonia either "abates the symptoms or favors the removal of the products of inflammation by increasing elimination through the skin and kidneys"; or that "generally in fibrinous pneumonia aconite is sufficient up to the period of crisis."*

To my mind there are other drugs eminently more useful, not only theoretically but practically, and here I am speaking both of pulmonary congestion and of pyrexia, which is closely allied with it; and often, as it were, being increased in degree when the congestion is more extensive and intense.

I have never seen any drug act as well in this stage of pneumonia as small repeated doses of antimony. The salt I have given most frequently is not tartar emetic, but kermes mineral, or the oxysulphuret of antimony. I have given it in a mixture with syrup of gum and orange flower water, usually in doses of a thirty-second of a grain every two hours or every hour for a while; employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectoration becomes easier and more abundant, and the sputa, from being very tenacious and viscid, are more fluid and brought up with relative ease and increased frequency. Thus the dyspnea is lessened without doubt. Kermes mineral given in the way I have mentioned is not irritating to the digestive tract as tartar emetic often is, even in small doses. Moreover, it does not produce a collapsed condition. It can be given as an expectorant with particular advantage in pneumonias grafted upon bronchitis, which are so frequent among old people. It suits children also remarkably well, in whom the stomach often rebels against the use of tartar emetic. To aid its advantageous effects, we should employ at times alcohol internally and revulsives to the chest walls.

Kermes mineral was recommended formerly by Professor Meyer as an admirable medicine in febrile cases to promote diaphoresis and to reduce the force of the circulation. We usually associate copious sweating and the use of narcotics (tartar emetic) with the name of Rayer (1817, Mém.), and whenever this idea is referred to authoritatively we are inclined to give it some consideration. But, notwithstanding its occasional usefulness, there is no doubt now, as I said at the time, that it is not the best drug, and indeed at the present time it is almost entirely abandoned. It is, however, one of the best means of inducing diaphoresis, and it is a powerful sedative. When used in small doses it will not excite vomiting, and its action is not so rapid as that of tartar emetic, but its beneficial effects are more prolonged, and its use is not so objectionable as that of tartar emetic.

As the best of all remedies, since their existence, for producing general diaphoresis in pneumonia, even though it might be that the blood was not warm, the means to be used are either Nitroglycerin, Spirit of Camphor, with real Saffron, or Diluted Trinitrophenol (Nitro-glycerin), according to the use of saffron in croupous pneumonia. * Nothing is more remarkable than the capacity of nitroglycerin

there is no convalescence; three days suffice sometimes to bring back the patient from the gate of the grave to a state of health "—we should avoid undue skepticism.

Sturges* takes the view that in the cases referred to by Trousseau the natural march of pneumonia was so much disguised by drug interference that wholly false conclusions were reached. I can not admit this statement of Sturges as wholly correct, for while I have not seen such effects as those described by Trousseau from the action of antimony in pneumonia, neither have I ever seen what these words of Trousseau fairly describe, as Sturges states, "the natural course of the disease in many cases under our modern treatment." By this, I presume, he means expectancy, since otherwise natural course of disease appears to my mind a misnomer. In the tabular statement of the results of treatment of pneumonia by Grisolle we find in his third class where eighteen died out of thirty; "of the twelve who recovered, nine" in the greatest peril "improved rapidly under the antimony" (Sturges). The patients improved under the antimony treatment with a rapidity unobserved in any other treatment—a statement corroborated, as we have seen, by Trousseau" (Sturges). The probabilities are that the antimony (tartar emetic), which was given in doses of a sixth of a grain to a grain every hour or two, caused the frequent vomiting and stools from which patients thus treated suffered in the first twenty-four hours. "Nevertheless, in the concurrent testimony of two independent observers, the general improvement following these truly drastic measures was so obvious as to suggest the figure of a man snatched from the grave." (*Loc. cit.*, p. 395.)

I have become convinced that the great mistake made formerly was to employ the wrong salt and to use it in excessive doses. Against the kermes mineral employed in much smaller doses, frequently repeated, there are no such objections. And after the study of its action in a series of cases I am persuaded that this remedy is not futile, and is often of value in pneumonia as an expectorant and in the other ways to which I have referred. Osler (p. 532) considers that it would be a real gain in cases of croupous pneumonia "to loosen the cough and give to the sputa a certain degree of fluidity." Now, in my experience, these results are distinctly obtained with the rational use of kermes mineral in the first and second stages of croupous pneumonia.

Whenever the heart is particularly taxed by reason of the pulmonary disease, it is manifestly shown by very numerous moist rales at the bases posteriorly, and more or less at the anterior base, and with the sanguinolent or rusty sputa, I am confident that the drug produces the rapid and remarkable removal of some glycerin given by the mouth, or, better still, by subcutaneously. In these conditions of mind and body, after a very small dose of a hundredth of a grain has been administered, usually within the condition of the patient is immediately changed. The remedy is the patient's only invariable or true guide for the use of nitroglycerin under these conditions. The patient's condition is improved, the cough, dyspnea, and expectoration are all greatly relieved, and the patient is able to breathe more easily.

* *Journal of the American Medical Association*, 1884, p. 100.

* *Practical Medicine*, 1884, p. 100.

use of this drug. Moreover, the cyanosis of lips, face, and upper surface of the body, together with the rapid, superficial, panting respiration, will both be favorably modified. The skin soon takes on a better color and the breathing becomes steadier, deeper, and slower.

The use of inhalations of oxygen in relieving pulmonary congestion has, in my experience, afforded marked temporary relief to breathing in the greater number of cases of pneumonia. There are, however, exceptions to this rule, and in a few instances not even relief was afforded, but the dyspnoea and subjective distress was, on the contrary, obviously increased by inhalations of this gas. The cases of general oedema were those, singular to relate, in which I have remarked the greatest extremes. While some patients thus affected were notably relieved, others were made more anxious, and, if possible, still greater sufferers. I have not been able to account invariably for these differences of action. I have assumed, however, that whenever the pulmonary engorgement was most considerable and yet independent apparently of right-heart failure, the oxygen proved to be particularly serviceable. In instances in which the right heart finally gave way, and with increasing dyspnoea the accentuation of the second heart sound over the pulmonary orifice diminished notably in intensity, while the pulse remained small, feeble, frequent, and irregular, oxygen has not proved itself so important an agent for good; and yet some writers find "that when the condition is mainly one of cardiac failure and collapse, particular benefit is obtained."*

I shall be glad to have an expression of opinion on this point. Certainly there are cases of severe pneumonia in which the favorable action of oxygen is remarkable, and some of these are where cyanosis is most marked.

I am inclined to believe in the treatment of pneumonia, just as I am in the treatment of typhoid fever, that it is essential to have the patients drink abundantly of water, and not force them simply to take milk, beef-tea, or broths of different kinds, with the idea that all that is required is to give nutritious fluids and lose sight of the great importance of water given by the stomach to promote elimination

ment of typhoid fever, by promoting abundant diuresis. It thus favors as much as possible the elimination of the products of organic disintegration. No doubt increased evaporation, or transpiration from the skin and lungs thus affected, reduces the abnormal temperature of the body.*

The proper use of alcohol in the treatment of pneumonia is one of the most difficult with which we have to do. Unquestionably in many instances it is very beneficial, and for different reasons. Putting aside its direct stimulating properties, it must be regarded as a very acceptable food in moderate amount. It is readily assimilable and easily oxidized. Moreover, it prevents tissue waste and diminishes the amount of carbon dioxide, thus helping respiration when this function is particularly embarrassed. Alcohol is a notable relaxor of vessels, and the capillary circulation is thus materially improved and relief afforded after this manner to a laboring heart and engorged vessels in the different internal viscera, lungs, liver, spleen, and kidneys.

Finally, alcohol gives nerve force, thus controlling adynamia, restlessness, wakefulness, and delirium, particularly when all these symptoms are but the index of the intense general poisoning of the system in pneumonia. It seems, therefore, that it is generally judicious practice, when any reasonable doubt prevails as to the condition of the patient with respect to any one of the numerous conditions which seem threatening to life, to give repeated and moderate doses of alcohol. I know of only two absolute counter-indications:

1. Cases in which the patient is already highly plethoric and where the mass of blood, rich apparently in all nutritive qualities, would merely have this state exaggerated, as it were, by alcohol, which is so readily and rapidly assimilated, and thus becomes positively a hindrance to the vital function. (Smith.)

2. Cases in which the hepatic engorgement and gastric catarrh render the use of alcohol pernicious, because nausea and stomachal intolerance are increased by its exhibition even in moderate amount, and thus assimilation of food and water is prevented.

In just such cases do we give most evident relief with repeated doses of calomel, small or moderate in amount, which arrest fermentative processes in the stomach and intestinal tract and free the portal circulation in the most evident manner. An engorged and sometimes tender liver, a hard and distended abdomen, are frequently dissipated by this medication. In this way notable relief is afforded both to the respiration and circulation, and not seldom the temperature will drop a degree or two after one or two free movements of the bowels. I am not at present referring to the use of calomel when the patient is first placed under treatment by the physician, but rather to cases in which treatment has continued for two or more days after the initial chill and where the tongue remains yellow and thickly coated with fur, while the breath is most offensive. Such an example was observed by me only a short time since, and I cannot urge too strongly the importance of watching

and treating intelligently such conditions, when they are clearly present.

The two dangers most to be feared in the stage of hepatization, as well as that of crisis, come undoubtedly from heart failure or pulmonary hyperæmia. The heart failure may come on suddenly, or manifest itself gradually. It may affect the entire heart, and in that case be, as a rule, caused by the intensity of the general poisoning of the system, or it may be occasioned by the giving way of the right heart under the dependence mainly of increasing pulmonary obstruction. This increased pulmonary obstruction is, moreover, evidently due in a measure not to the inflammatory nature of the disease, but rather to vascular paralysis, which comes on at any time from the fourth or fifth to the seventh or eighth day of the disease in numerous instances.

How are these conditions to be met? My own convictions are formally opposed to the use of digitalis, or digitaline, except in very small doses, and then only to control cardiac irregularity when it occurs. I have reached this opinion slowly. I feel confident, however, that it is based upon correct interpretation of pathological facts as they are offered to us. Digitalis, if it acts at all in any appreciable manner, must of necessity increase the power of the heart, at the same time that it narrows and closes up, so to speak, the circulation in small vessels. Now, in instances in which passive congestion is already a great danger, this effect is precisely what we should most wish to avoid. Nor do I believe that this unfortunate effect can be properly prevented by the relaxing effects of aconite, or aconitine, on the peripheral circulation, particularly under the conditions now referred to. It is true that I have never seen death ensue directly from the action of this drug at this time. I have known, however, the pulse to be lowered in a sudden and alarming manner, and it was necessary on more than one occasion to interrupt its use immediately, and to stimulate the patient freely according to the available method so as to restore falling strength in a semi-paralyzed heart, and even slight tension to the circulation.

Ever since Dr. Roosevelt* published his very striking demonstration of the hypodermic use of strychnine in cholera cases I have watched the use of this drug in my treatment of pneumonia with increasing interest. I remember distinctly that first by the mouth, and later, when there is evidence of heart failure coming on, either occasioned or frequently occasioned by the hypodermic method. Sometimes in the latter feature, as it is wise and proper, but when there is no marked arterial tenderness, and hypotension in the use of strychnine by the mouth, but when the use of the drug in this manner, and even the use of the drug to give a hypodermic of strychnine from the mouth, is sufficient to give. I have a slight, but not a very certain, but certainly in statistical reports, that strychnine is a very useful drug. With others I find the drug together to strychnine in few cases of low frequency, and a lot of patients a condition of nervous irritability, which is

at times distressing and interferes with any possibility of sleep, unless narcotics in judicious doses are resorted to.

On several occasions already, when a patient's condition has seemed desperate, and after strychnine to the highest possible limit compatible with safety has been vainly employed, I have had at least temporary results of considerable value from the use of hypodermic injections of extract of coca, made up aseptically. I am of opinion, however, that we must rely also in these cases upon the use of nitroglycerin hypodermically in sufficient doses to restore the patient to a relatively good condition. These hypodermic injections, alternated with those of strychnine, will do what no other drugs in my experience will accomplish. The basis of the use of nitroglycerin is, as we all know, to bleed, so to speak, from the veins into the arteries, and thus allow the wearied and laboring heart to have the opportunity to tide over a critical period, where saving its energy is of as much if not more importance than our efforts to add to it.

In just such cases bleeding was formerly employed with, as we know, at least the happiest temporary effects, and it is probable that except for this seemingly heroic measure many lives would have been inevitably lost. Bleeding was the only means in those days which would act efficiently and rapidly, and if relief were not thus afforded to the acute and grievously obstructed pulmonary circulation, the patient fell suddenly into collapse and died.* Let us not ignore that these cases still occur, and, in my judgment, must be treated still in this manner. Only one means will save them, and this means is bleeding. Such cases, in general, are those which are evidently sthenic in character and where the inflammatory lesion seems most marked from the beginning; those cases in which, after twenty-four or forty-eight hours, both lungs are so much congested from venous paralysis and insufficient heart-power, that drugs can have, do have, no visible good effect, unless we take away an abundant amount of blood by venesection. Of course, in such instances, if the patient is an alcoholic, we are greatly handicapped by reason of probable degeneration of heart, kidneys, and arteries; but we can not be confident invariably to what extent this degeneration has gone, and we are frequently in the position of offering a man, practically, his last and only chance of survival.

Immediate effect the following we may be able to use nitroglycerin, strychnine, or caffeine, hypodermically, with the greatest benefit. Frequently, of course, we shall be grievously disappointed as to the result, and our patient will speedily die, but in such instances, even though the kidneys are apparently in good condition and there is no strychnine, the patient will sometimes survive. I have frequently seen patients, however, who have been given nitroglycerin, and who have been given a few hours, that the patient's condition has been made better. Some, however, die, and some, however, the same and that may follow within a few hours.

In referring to the use of the hypodermic method I have not thought that the general practice of the hypodermic

* *Med. Record*, December 14, 1890, p. 100.

* *Med. Record*, December 14, 1890, p. 100.

the direct, immediate cause of death, I have later concluded that a slowly forming ante-mortem heart-clot had much to do with the fatal termination. In one instance which I saw in consultation with Dr. I. E. Traub, of New York, and where we bled the patient about seventeen or eighteen ounces at the third day of the disease, we had at first notable relief to the breathing and circulation, but soon the symptoms of distress and restlessness came back in aggravated form and the patient grew worse suddenly and died. In this case no murmur could be heard in the cardiac region, and although the sounds were slightly muffled and the action extremely rapid, we only suspected the formation of heart-clot, without being able to affirm it. In view of the sudden death of the patient and without other sufficient causes satisfactorily to explain it, I now believe cardiac thrombosis was the immediate cause. I have not infrequently, especially in former years, and when I was a hospital interne, seen many autopsies where pneumonia undoubtedly occasioned the heart-clot which was the direct cause of death. While in these cases of pulmonary congestion I do not believe the venesection affords the relief which we should expect to derive from it, if this complication (heart-clot) had not arisen I am of opinion that if under these circumstances we should follow the venesection by the subcutaneous injection of a salt solution, we would possibly obtain happy results. It certainly seems rational to act in this manner, since we know that the chlorides in the first and second stages of pneumonia are passing too freely out of the blood, and no doubt require to be supplied. I am glad to note that another than myself has seen and utilized this indication with evident good effects.

In a late number of the *Virginia Medical Monthly* Dr. Cunningham, of Ensley, Ala., contributes a very valuable paper, in which he writes that he employs hypodermoclysis of saline solution, daily, in just such cases, with the object of preventing cardiac failure, which he thinks may be due to ante-mortem clot.

It is, however, to be feared, that the action which weakens the heart, and not simply the mechanically increased resistance in the right chambers. This seems to be proved by the great fall in the pulse, as well as in the breathing, coincident with the crisis, although the physical signs of pneumonia are going away. It is a considerable change. Under these conditions, according to Shattuck, "the temperature of the chest falls, which we must try to counter." This means the application of early antipyretic therapy and the administration of the largest amount of fluid with some fluid food which can be tolerated, with free ventilation of the apartment.*

There is one more method, it is also mentioned by Robinson. This is the practice that when the pneumonia has been treated by the venesection which has been administered, the patient is given the heat from an electric coil, the use of long time and hypopyrexia. As regards the former, he writes:

"Electric heat is applied to the back from a coil of wire, and the patient is covered with a blanket. The

by enfeebling its tissue and starving its nerve centers; but as an obstacle to the circulation, throwing a strain upon the right heart, it is of small moment, as the instant the temperature falls convalescence proceeds uninterruptedly, the heart making no account of the apparent obstacle."

I would also say an emphatic word in favor of frequently repeated doses of *strong* black coffee. Black coffee and alcohol, particularly old brandy or rum, by the stomach, will be assimilated and hold the vitality of the patient when other food or stimulant will be of little or no apparent benefit. And yet, according to some writers, the notion that these liquors—viz., old brandy or whisky—are to be preferred because of the "mellowing" properties conferred by age, should be condemned as a delusion. Such liquors are declared to be much more irritant to the stomach and less certain in their general supporting effects than pure ethyl alcohol deprived of aroma.*

We are told, indeed, that the best French cognac is, "with a few exceptions, nothing but the alcohol of beets, of poor molasses, changed and colored by the fabricator by the addition of infusion of tea and various essences which give it bouquet." Such brandies are almost sure to contain methyl alcohol in quantity, certain when freely administered to do harm to the patient. Either such affirmations are false or else I have been particularly fortunate in employing cognac or whisky which produced no such deleterious results.

In my judgment, caffeine does not replace the use of coffee, and for the reason that the caffeotannic acid, in conjunction with certain extractive matter contained in coffee, is probably nutritive, whereas in caffeine we have only an alkaloid which increases the power of the cardiac contraction and raises somewhat arterial tension while promoting diuresis.

According to Delatfield (Pepper's *American Text-book of the Theory and Practice of Medicine*, vol. ii, 555), the treatment of the exudative inflammation which seems to him the most satisfactory is that by the combined use of aconitine, digitaline, and whisky. The aconitine (one sixth of a milligramme) and digitaline (one eighth of a milligramme) are given in tablet form together. The frequency with which they are repeated is regulated by the pulse. The endeavor is made to get a pulse about 80 and of good quality. This treatment requires careful watching, and "if it be carried too far the pulse may fall to 30 and the patient pass into a condition approaching collapse."

According to some observers, it is mainly the action of aconite which slows the pulse, and it is this tablet which we should stop giving when the pulse reaches one hundred, or loses notably its force and becomes irregular. According to others, it is the digitaline which reduces the frequency of the pulse, "while the aconite, acting upon the heat-producing as well as the vaso motor center, brings down the temperature to about 100°." My own observation is to the effect that the aconitine has more power in reducing the pulse rate than in lowering temperature. If, however, as is often the case, after giving the aconitine regularly every hour for twenty-four or thirty-six hours at the first, second,

* *Virginia Medical Monthly*, (1904), p. 18.

† *Journal of Medical Research*, (1904), p. 107.

* *Therapeutic Review*, January 15, 1894, p. 36.

sponge bath with ice-cold water has been tried in quite a number of cases. (Bath being given every four hours if temperature was 103° or over.) For it we can not say much. Usually it reduced the temperature and respiration; sometimes it did not. On the pulse the effect did not seem good. Usually the patients came out of such baths shivering, more or less cyanotic, and very miserable, so that they dreaded them and pleaded to have them stopped. Oftentimes the distress caused by the expectation and realization of the procedure was quite sufficient to neutralize any good effect which might have been obtained.

This year, so far as hydrotherapy is concerned, we have contented ourselves with the occasional administration of a sponge bath with water at 65°. Such a bath, continued for fifteen minutes, a patient who seems to be suffering from his fever usually enjoys and seems benefited by; but even such a bath we found was not desired very often during the course of the disease.

So far as drugs are concerned, we have rarely employed them for the reduction of the pneumonia temperature. Occasionally we have given a dose of phenacetine or phenocol—rarely acetanilide. In the doses employed we never saw any distinctly bad effects from them, but their effect on the temperature was variable, often failing to effect it to any extent.

The Respiration.—The rapidity of respiration being regularly dependent on some other factor—the high temperature, feeble pulse, pleuritic pain, etc.—it was controlled by looking to the causative factor.

Pulse.—To this symptom our attention was naturally most given. A rapid pulse (over 100), with a sharply accentuated second sound over the pulmonary valves, such as is regularly heard in pneumonia, was regarded as a plain indication for some stimulation. This was given by means of nitroglycerin, whisky, and strychnine. The nitroglycerin would be begun in doses of gr. $\frac{1}{100}$ every two or three hours—sometimes by the mouth, preferably by hypodermic. Of whisky we would give half an ounce every three or four hours to begin with. Strychnine was introduced in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$ every four hours.

As the disease progressed and the strain on the heart became more severe, showing itself in greater rapidity, less strength, and more or less cyanosis, the quantity of each of these drugs would be increased, the nitroglycerin especially being pushed. We would first make the administration more frequent—every two hours, then every hour; then the quantity would be increased to gr. $\frac{3}{6}$ or even $\frac{3}{5}$, the rapidity of the pulse, the sharpness of the second sound (pulmonic), and the cyanosis being the guides in this respect. In most of the cases gr. $\frac{3}{6}$ or even gr. $\frac{3}{5}$ was quite sufficient to meet all the indications, but the most signal benefit being derived from the use of a very small dose of digitalis, from $\frac{1}{10}$ to $\frac{1}{8}$ grain, and the presence of the latter in the composition being the only thing that would prevent the use of the nitroglycerin in the most advanced cases. The quantity of the digitalis was increased as the disease progressed, and the nitroglycerin was pushed to the point of producing a decided effect.

With the treatment outlined we do not often see the marked fall of respiration and pulse which are vaunted as the results attained by digitaline and aconitine, but we do see such relief in the severer symptoms as undoubtedly helps the patient to a final recovery.

Pain.—For this symptom we sometimes strap the chest—a measure which certainly often affords immediate relief, and has the rational advantage that it gives rest to the inflamed part.

Often we employ counter-irritation by mustard or hot flax-seed poultices. Frequently we give morphine in moderate doses by mouth or hypodermically, as the surest means of relieving pain and giving quiet rest.

Cough.—We have practically never used expectorants. Ammonium chloride has been employed a few times, but without any definite results. When the cough was very troublesome morphine was resorted to, just as for the pain. Oftentimes the hot poultices seem to afford marked relief from cough as well as pain.

Cerebral Symptoms.—These were treated really in the same way as the temperature, the acute cerebral symptoms almost always accompanying the high temperature, and being relieved when the temperature was reduced.

For insomnia and restlessness we again often resort to morphine.

REPORT FROM DR. D. McL. BARSTOW.

The treatment of pneumonia at the New York Hospital during the winters of 1892-'93 and 1893-'94 has been largely expectant. For the most part we have been content to treat the symptoms. Taking the more important of these in order, our treatment may be summed up briefly as follows:

Temperature.—We have used the tubs to some extent, but without much benefit. We use them in cases with hyperpyrexia—a temperature showing a tendency to stay above 105° F., and reaching 107° F. at times. As these cases, however, regularly die, we have not been able to convince ourselves that the tubs did any good. The temperature sometimes drops a degree or more, but whether this is due to the baths or to the regular up-and-down course of pneumonia temperature, I am unable to express an opinion.

We sometimes use sponge baths, but with a view rather to increasing the comfort of the patient than to reduce the temperature, which we have not found to come down under sponging more than a few tenths of a degree, and even this reduction is by no means constant.

In general, we do not regard a high temperature as a serious symptom, unless it be continuous. In the ordinary cases the temperature does not seem to influence the course of the disease.

Pulse.—This we regard as the most important and reliable index of the patient's condition. Where it is rapid, unless it be too feeble, we take it every hour, and administer a sixth of a milligramme of aconitine if the pulse be above 100°. The aconitine has not seemed to us to have any very marked antipyretic action, but it slows the pulse and reduces the arterial tension and seems to render the ordinary patient more comfortable. We have used the smaller "irritative pill," but we do not like it as well as the other, the dose separately, and withdraw one or another as the patient's condition seems to indicate.

Stress, time, and force found to be valuable in many cases. It acts as a useful stimulant and is much older than dentals. In the last series of tests, one of the kids, I have seen a patient do very much better in the experiment every hour, kept up for twenty-four hours. In these cases, we watch for increased reflexes, but a falling reflex is an indication for stopping the dose.

the root of the tail. A piece from the floor of the fourth ventricle of the medulla—two cubic millimetres—was rubbed up in one cubic centimetre of bouillon. Of this five minims were injected with an ordinary hypodermic syringe.

Tabulation in Detail.

No. of mouse	Date	Time of day	Time of death	Remarks
1	Feb. 11	Not stated	Not stated	Rabbits 117 and 118 trephined and affected with rabies.
2	Mar. 14	8th day	10th day	Rabbits 138, 139, and 140 trephined and affected with rabies.
3	Mar. 14	8th day	10th day	Rabbits 138, 139, and 140 trephined and affected with rabies.
4	Mar. 14	8th day	10th day	Rabbits 138, 139, and 140 trephined and affected with rabies.
5	Apr. 3	11th day	12th day	Rabbits 147 and 80 trephined and had rabies.
6	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
7	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
8	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
9	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
10	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
11	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
12	Mar. 24	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
13	Mar. 26	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
14	Mar. 29	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
15	Mar. 30	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
16	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
17	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
18	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
19	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
20	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
21	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
22	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
23	Apr. 2	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.
24	Apr. 28	10th day	10th day	Rabbits 147 and 80 trephined and had rabies.

The total number of mice was 31.

Accidental deaths.....	8
Regular rabies.....	17
Recovered.....	1
Convalesced and relapsed.....	1
Escaped the disease.....	4

Subtracting from the total accidental deaths reduces the number to 23, 19 of which took rabies. If this is a maintainable average, then 82 per cent. of mice take the disease when hypodermically injected.

As a control to these experiments seventeen rabbits were trephined from the medulla of the mice and all died of rabies. Of these, several are noteworthy.

Rabbit 147 was trephined and injected subdurally from the medulla of mouse 6 (which had been injected at the root of the tail hypodermically with the medulla of rabbit 121), and developed rabies on the ninth day.*

Rabbit 140, injected subdurally from mouse 2, developed rabies on the ninth day.

Rabbit 118, trephined from the medulla of mouse 1, had advanced rabies on the eleventh day; mouse 2, injected hypodermically from the medulla of this rabbit, developed rabies on the eighth day.

Rabbit 117, injected subdurally from the medulla oblongata of mouse No. 1, had advanced rabies on the eleventh day.

In conclusion, I may reiterate that in the mouse we have an animal which is easily experimented upon and in which the results are very pronounced and unmistakable. I therefore recommend highly the use of the mouse for the experimental determination of rabies.

ASPERGILL'S MYCOSIS OF THE ANTRUM MAXILLARE.*

By JOHN N. MACKENZIE, M.D.,

DAYTON, OHIO.

WHAT I have to say will rather be in the line of some preliminary remarks than in an attempt at a full presentation of the subject. The matter is still under observation, and at this stage no definite conclusions can be drawn. The patient whose history forms the basis of my remarks was a young woman, about thirty-five years of age, who was brought to me in the early part of last fall. I shall not give a complete history of the case, but simply call attention to a few salient points.

In the case reported by Dr. Theobald on account of a pain in the right jaw, which he had was well marked a case of pure otitis media interna. This, according to the note which he kindly put in, was the chief symptom which brought her to me. From that time on. Often there was nothing wrong to be seen in the ear, but at other times there would be some

* The material used was the (the tooth removed from the dog) which the mouse had bitten. A bone which the dog had bitten. The mouse had been dead for the period of incubation from the time of the bite.

† Read at the meeting of the American Laryngological Association at the University of Chicago.

dix, about three inches long, quite thick, but very contracted at its junction with the intestine. It flashed upon me the idea that gas, feces, or other substances would get into this pouch, and then could not get out, and therefore cause the pain. I therefore removed the useless organ by resecting the peritoneal covering and then ligating the most constricted junction with the cæcum. It was then cut away, the mucous lining of the stump carefully scraped away, and the resected peritoneal cavity carefully washed out with five liters of water. Search was made for any other abnormal conditions of the abdominal organs, but nothing was found. The abdominal incision was made in the usual manner, sewing first the peritoneum, and then the muscular layer, fascia, and skin, in tiers. The duration of the operation was just ten minutes. The patient made a fine recovery and has been free from pain since, which is a longer time—viz., four months—than he has been free from pain for two years, and I think it will continue so if our diagnosis and treatment were correct.

401 WASHINGTON AVENUE

GANGRENE OF THE VAGINA
FROM TINCTURE OF CHLORIDE OF IRON.*

BY CHARLES E. NAMMACK, M. D.,

SITTING PHYSICIAN, GOVERNMENT HOSPITAL, NEW YORK, ETC.

When one recalls the multiplicity of medical journals, newspapers, and the frequency of articles therein on the proper treatment of incomplete abortion, it would seem that the light of correct management of these cases would penetrate the minds of even these practitioners who have been for years accustomed to let "Nature take its course" in waiting for removal of products of conception to be disposed on the ground urged to expel them. Yet the number of poor women who apply at Gouverneur Hospital every year for treatment of hemorrhage and septicemia following incomplete abortion indicates that there is yet uncertainty in the minds of many as to the proper procedure in these cases, and that the use of the curette and intra-uterine irrigation tube will have yet another adversary. The method employed and the results are satisfactory. As an example of the result of such a plan, "Treatment of the case," forms the heading of this paper is herewith given:

Female *B. truxalis*, thirty years old, in condition, has been about two years past. Menstruation took regular and easy motion, when it ceased for three months. At the end of October, however, and again in May, following the same period, she experienced, with increased frequency, with acute, burning, hot, friction, of subacute of heat, some in the first instance of the uterine. At present, in the latter, from the commencement of more frequent motion, as well, and more often, the pain, she was found to be marked, some, very great, being given, and a frequent, frequently between two and four, with little. Lastly, the abdominal symptoms, including that covering the external portion of the uterus, as mentioned last time, gradually, however, and gradually, increased, and the last, now, seemed to be at present. The internal pressure, which was marked with motion, and the vaginal, with motion, were. Last, the same of the vaginal, which, in the history of the present, was.

³ *Book of the Dead*, trans. James H. Breasted and Gernert, ed. (New York: American Museum of Natural History, 1925).

Fortunately, the use of iron preparations to control uterine hæmorrhage is becoming obsolete, so that cases like the one here narrated are rare, and if this report will serve to enhance their rarity by pointing out a possible result of this practice, its recital may be justified. Garrigues (*Diseases of Women*, 1894, p. 343) refers to a case in which a tampon soaked in undiluted liquor ferri chloridi caused an exactly similar condition to that found in our patient. R. A. Murray (meeting of the Section in Obstetrics and Gynecology, New York Academy of Medicine, April 23, 1891) said he had known undiluted persulphate of iron to cause cicatrices in the vagina, and advanced this as a possible cause of atresia of the vagina in a case reported at the same meeting by Dr. Malcolm McLean.

29. Lisa Twissom, *supra* note 28.

AN ORIGINAL PLAN OF LOCATING THE URETERS
TO PREVENT INJURY IN
VAGINAL HYSTERECTOMY,
BY KEEPING *IN SITU*
URETER CATHETERS DURING THE OPERATION

By J. SINKLER IRVINE, M.D.,

Is vaginal hysterectomy injury to the ureters can be prevented by introducing a ureter catheter or sound (Kelly's) into each of the ureters, and keeping it there during the operation. This enables the surgeon to locate the ureter *easily* at all stages of the operation, so as to prevent cutting the ureter or getting it in the ligature or the bite of the clamp. While the sound or catheter is in the ureter it is impossible for the operator to include the ureter in the stump. "The dangers of vaginal hysterectomy," says an American text-book of gynecology, "are sepsis, hemorrhage, vesico-vaginal fistula, and injury to the ureters by the clamp or ligature. . . . Therefore, that surgeon who carefully avoids these dangers will, in the long run, be the most successful." It will be seen from this that injury to the ureters is not a new or rare thing, but a common one. The unfortunate accident of entangling one of the ureters in the clamp or ligature, which has repeatedly happened, is always fatal. For full directions as to sounding and catheterizing the ureters in diseases of the kidneys, etc., I mention the writings of F. H. Kelly, the physician in charge of the Johns Hopkins Hospital, Baltimore. So far as I have seen, no one has ever proposed passing the ureter catheter or sound or sounder before or after the operation, and so it is not to the credit to either the *Chicago* literature, or original with Dr. Alexander Irvine.

A Convenient Mode of Administering Quinine 175

and our readers are disposed to try it, we would caution them that the dose of glycerin seems rather large, especially as nothing is said about the patient's age or the frequency of its repetition.

CREOLIN IN INFANTILE FARRHIEA.

The *Mercredi médical* attributes to Dr. Schwing the following formula: Creolin, two or three drops; cinnamon-water, three fluidounces; syrup, one ounce. A teaspoonful is to be given every hour.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 21, 1894:

DISEASES.	Week ending Aug. 14.		Week ending Aug. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Dysentery	97	1	24	8
Scarlet fever	300	7	250	1
Croup	3	0	3	0
Measles	22	2	97	1
Diphtheria	126	25	189	26
Small pox	2	1	2	0
Total	550	36	591	36

The Late Dr. George E. Fenwick, of Montreal.—In an editorial published in the *Montreal Medical Journal* says that it is with the profoundest feelings of sorrow and regret that it has to record the death of Dr. George E. Fenwick, which took place on the 26th of June. He was born in Quebec in 1825, and was graduated from the McGill University in 1847. For many years, says the *Journal*, he had been a prominent figure in the medical world of Canada, and his reputation as a bold, skillful, and scientific surgeon was not confined to that country alone. He held many important positions, and for twenty-five years he was connected with the teaching staff of McGill University, where he left an honorable record which will not soon be effaced. He was a man of strong personality, and his sympathetic manner, his willingness to place his knowledge and skill at the service of his younger brethren, his charity for error, and his modesty and gentleness endeared him to

The Death of Dr. Philip Lonsdale, of the Navy, is announced by the *London Standard* as having taken place on the 21st inst. Dr. Lonsdale was seventy-seven years old, and had been a member of the Royal Society for many years.

Change of Address.—Dr. J. M. Byrnes, 100 West 11th St., N. Y.

Naval Intelligence.—The *London Standard* says that the *USS Albatross* is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

Dr. J. M. Byrnes, Medical Inspector, United States Army, is now at the Naval Academy, Annapolis, Md.

PENROSE, T. N., Medical Inspector. Detached from the Norfolk Hospital and ordered to special duty connected with repairing and renovating the New York Naval Hospital.

CEBORNE, C. J., Medical Director. Detached from the Naval Hospital, Chelsea, and ordered to the Naval Hospital, Norfolk.

HOEHLING, A. A., Medical Director. Detached from special duty at Washington and ordered to the Naval Hospital, Chelsea.

KIDDER, B. H., Medical Director. Ordered to report to the chairman of the Senate Committee investigating the Ford Theater disaster.

Letters to the Editor.

EARLY AMERICAN SYMPHYSIOTOMIES.

PHILADELPHIA, August 13, 1894.

To the Editor of the *New York Medical Journal*:

SIR: I wish to correct an error that is going the round of the medical journals of the United States, taken from the *Transactions of the Obstetrical Society of Philadelphia*, before which I gave credit to Dr. William Thomas Coggin, of Athens, Ga., for having performed "the first symphysiotomy in the United States." When I did this I was not aware of the fact that three unreported cases belonged to the years 1880, 1884, and 1889. The operations of 1884 and 1889 are not taken on the word of the operator, as in the Coggin case and forty-seven others, but have been sworn to before courts and sealed with the court seals—in one instance by the patient herself and in the other by one who saw the operation. I have every reason to believe that this operation dates back to April, 1880. In due time the three cases will be reported. As the operations were declared fictitious by several good men, we have taken special pains to satisfy them that they were actually performed as alleged. If Coggin made up his case, as did Pilate and Archer, of Louisiana, with their Cesarean sections, in 1860 and 1878-'79, I have only to persevere until the truth is brought to light. Pilate was generally credited with his case, but nineteen months' search gave it to Boagni. The Jewett operation can not be earlier than the fourth.

ROBERT P. HARRIS, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of May 2, 1894.

The President, Dr. LEONARD K. HORN, WOODS, in the Chair.

(Continued from p. 18.)

The Early Diagnosis and Treatment of Asiatic Cholera, with Report of Twenty-one Cases.—Dr. J. M. BYRNES read a paper with this title.

Dr. HARRIS, M. D., said that he had only had personal experience with the last reported diagnosis of cholera. He thought it was now generally accepted that there was only one mode of making the diagnosis in doubtful cases, and that was by bacteriological examination. His first experience in cholera examinations had been in 1885, when the first of the modern epidemic of cholera had occurred at quarantine. The first case examined had been on the steamer *Albatross*, which had come

from an infected port, and had arrived with apparently a full bill of health. There had been previously another steamer from the Alesia he had been asked by the health officer to perform an autopsy on a man who had died shortly after his removal from the steamer. The clinical history had not been that of Asiatic cholera, and the autopsy had shown that the cause of death had been acute lobar pneumonia. The steamer had been about to be discharged when a child, five years of age, had been found to be suffering with what had been diagnosed as cholera infantum. The child had been removed from the steamer and a few hours later had died. An autopsy had been made on this child and tubes inoculated from the intestinal contents, and on the following day, on microscopical examination, he had found a large number of spirilla, which in their morphological characteristics had corresponded with those of the cholera spirillum. After several more passengers, the health officer had persuaded the steamer for forty-eight hours until pure cultures could be made. Independent examinations had been made by the speaker and, at his request, by Dr. Prudden and Dr. Weeks, and the end of forty-eight hours all three had arrived at the diagnosis of Asiatic cholera. The patients had then been removed from the steamer. Six or eight cases of cholera had afterward developed from them. In a week after their discharge from quarantine a case had been reported to the health department as Asiatic cholera by two very competent physicians in the upper part of the city. The man was an Italian grocer who had been supplying groceries to the Italians working on the aqueduct. Anatomically, it had been as characteristic a case of Asiatic cholera as the speaker had ever seen, but on bacteriological examination only pure cultures of the ordinary colon bacillus had been found. The clinical history had been that of cholera—the man had died after an illness of only sixteen hours. The second group of cases in which bacteriological examinations had been used for diagnosis had been in the outbreak of 1892 in this city. A large number of cases had been examined, and twelve had proved to be Asiatic cholera. The utility of this method of diagnosis had been shown again in a most striking way, last year, when he had succeeded in getting a number of persons who had died in Jersey City under suspicious circumstances. This case

[illegible]

seen three of them. In these, both the clinical history and the anatomical lesions had been those of Asiatic cholera, but the intestines had not contained the spirilla. He had had absolutely no experience in the treatment of cholera, but he had been much impressed with the statistics presented by the author of the paper as to the mortality. In this connection the question naturally arose. Were these cases reported in the paper as severe as the average cholera cases in a severe epidemic?

DR. STEPHEN SMITH said that he had been attending a conference called for the purpose of securing international regulations which would prevent the cholera infection from being transported from India by pilgrims to Mecca, and thence to Europe. This had been the seventh conference of this kind—the first one had been held in Paris in 1851. They had not succeeded until quite recently in securing international co-operation. The prevalent idea now among bacteriologists regarding the specific nature of the germs had not been accepted by all the nationalities represented at this conference. He believed it had not yet been entirely accepted by the French, and the delegate from India had discarded it altogether, believing that the disease depended upon meteorological conditions, and hence that the more it was interfered with the more likely it was to become epidemic. Two methods of dealing with cholera were advocated—viz., (1) the French delegation proposed to prevent cholera from leaving India, and, if the infection succeeded in escaping, to raise every possible barrier against its progress; (2) the British delegation to put no restrictions upon the spread of cholera, but depend upon the local sanitation of the homes of the people. The speaker scarcely need say that the last policy had no other supporters than the delegation which had advanced it.

The conference had consisted of three delegates from each of the nations of Europe and Asia, except China, the first delegate being a diplomat, the others technical delegates—viz., physicians, sanitarians, etc.

The result of the conference had been the adoption of a series of rules and regulations having really the effect of laws, directed chiefly against the pilgrims coming to Mecca and the holy places in the East. Beginning at their homes, they were to have sanitary supervision all the way on their pilgrimage, and on their return to their homes again. The pilgrim had, in the first place, to declare to a local authority his intention of going on a pilgrimage. He must have the means to travel in good circumstances the whole distance and return, and provide for the proper care of his family while he was absent from home. If the pilgrim was thus provided, he was given a sanitary passport. Heretofore many of the poor and sick had undertaken the journey, and had been a source of danger to the community. The pilgrims going to Mecca were divided into two classes, the *hajj* and the *umrah*. The *hajj* was the great pilgrimage, and the *umrah* was the lesser pilgrimage. The pilgrims were to be provided with food and drink, and to be provided with shelter and clothing. The pilgrims were to be provided with a passport, and to be provided with a certificate of health. The pilgrims were to be provided with a certificate of payment of the pilgrimage tax. The pilgrims were to be provided with a certificate of payment of the pilgrimage tax. The pilgrims were to be provided with a certificate of payment of the pilgrimage tax.

may return to their normal state, and that when the necrosis has occurred the tissues may regain their anatomical integrity. In this view he is confirmed by the results of clinical observation.

The author regards the greater destruction of tissue in the human subject as compared with that in the lower animals as due to the longer course of the disease commensurate with the greater longevity and the accompanying slowness of vital processes in man. This same fact, too, enters into the prognosis with him, as it always has with other clinical observers. The less advanced the disease, the more hopeful the case, not only because the infected tissues may return to their normal structure, but also because, when time has elapsed and destruction been wrought, we have, in addition to maimed organs, to deal with a deteriorated constitution, exhausted by fever, malnutrition, loss of sleep, and actual loss of substance.

Professor Klebs divides tuberculosis in man into four stages, the first of which corresponds to the pretubercular stage of our old English authors, at least in its external appearances. But, according to Klebs, the body is already infected in this stage, as may be determined by some preliminary injections for diagnostic purposes. The second stage might be likened to our incipient phthisis, and the others, of course, are characterized by excavation and the more advanced lesions, no distinct dividing line being possible.

The exposition of his peculiar views and a detailed examination of his tables would occupy too much of our space. But whoever is interested in this very important subject will find nowhere so valuable a treatise on the present status of bacteriology as in this great work.

We must compliment the publisher on the excellent form of the book, with its splendid type, excellent paper, and solid binding. It is a pleasure to receive from the continent a book that does not need to be rebound before being read.

Essentials of Nervous Diseases and Insanity: their Symptoms and Treatment. A Manual for Students and Practitioners. By JOHN C. SHAW, M. D., Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School, etc. Second Edition, revised. Forty-eight Original Illustrations, mostly selected from the Author's Private Practice. Philadelphia: W. B. Saunders, 1894. Pp. 117 to 194. See *Long's Question Compans*, No. 21. [Price, \$1.]

THE author states that no new facts have been added to the present edition of this work, which is intended as a primer for students and a practical guide for a substitute for the text-book. It has been carefully prepared and will doubtless prove to be a valuable aid for the purpose intended.

Dermatopneumonia: the Treatment of the Diseases of the Skin. By GEORGE FREDERICK JACKSON, M. D., Professor of Dermatology, Women's Medical College of the New York Infirmary. New, revised and enlarged edition. New York: L. E. Trent, 1894. Pp. 1 to 111. [Price, \$2.75.]

When we first reviewed this work, on March 10, 1888, we said that we most cordially commended the book to the profession as the only complete and scientific treatise on the diseases of the hair and scalp that had appeared; and the present edition deserves whatever commendation we bestowed upon its predecessor. While it is well known that the author has revised and corrected every page of the old edition, he has added new articles, and the bibliography, now filling forty-four pages, has been brought down to January, 1892.

Moreover, aero-therapeutics must necessarily mean the atmospheric treatment of any disease, and not merely those of the lungs, and, since the book deals only with the treatment of lung diseases by climate, the second title is eminently descriptive.

Adverse criticism must, however, be limited to the volume's name, for the contents are all that can be desired. It is not an exhaustive work, it is true, but it is sufficiently full for the practitioner's needs, accurate, practical, and charmingly written. For those who wish a small work on the climatic treatment of pulmonary diseases, written by a recognized authority on the subject and presenting practically and usefully most reliable information on a very important subject, we must heartily recommend Dr. Williams's work.

To American readers in particular will the chapter on The High Altitudes of Colorado and their Climates be of great interest and value.

In a brief reference to the Adirondacks, a singular mistake attributes the systematic treatment of consumption there to Dr. "Loanis," of New York.

Pain in its Neuro-pathological, Diagnostic, Medico-legal, and Neuro-therapeutic Relations. By J. LEONARD CORNING, A. M., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. Philadelphia: J. B. Lippincott Company, 1894. Pp. 7 to 328. [Price, \$1.75.]

THIS, like all Dr. Corning's works, bears testimony to the originality of the author's thought as well as to his tireless study. One can hardly regret giving it a careful reading, for he will be repaid with some practical idea, but throughout the reader has the feeling that there is a lack of completeness, that the thought has not been developed to its full extent. This is not necessarily prejudicial to the book, because the best works are those which stimulate the reader to thought rather than fill the memory with a dry mass of facts.

At the outset Dr. Corning grapples with the difficult problem of how to formulate a definition of pain, and presents this as his solution: "The feeling (perception) evoked by over-stimulation of the nerves of special and common sensation." Although this definition may be open to a certain amount of criticism, it must be classified as unusually good, far better than the majority furnished by other writers. From this definition he passes on to the physiological, pathological, and clinical aspects of pain. More than half the book is devoted to special therapeutics, including internal remedies, local applications, surgical operations, the use of compressed air, and hypnotism. Finally there are some remarks on prophylaxis and on pain as a judicial punishment.

The book is printed clearly on good paper, and is quite well got up.

A Practical Treatise on the Diseases of the Hair and Scalp. By GEORGE FREDERICK JACKSON, M. D., Professor of Dermatology, Women's Medical College of the New York Infirmary. New, revised and enlarged edition. New York: L. E. Trent, 1894. Pp. 1 to 111. [Price, \$2.75.]

When we first reviewed this work, on March 10, 1888, we said that we most cordially commended the book to the profession as the only complete and scientific treatise on the diseases of the hair and scalp that had appeared; and the present edition deserves whatever commendation we bestowed upon its predecessor.

While it is well known that the author has revised and corrected every page of the old edition, he has added new articles, and the bibliography, now filling forty-four pages, has been brought down to January, 1892.

From the author's results it is possible that many of the beef extracts possess dietary value in virtue of albuminous constituents which, owing to their loss of coagulability and changed solubility, have escaped recognition by chemists and been included among the so-called extractives. A beef-peptone preparation subjected to similar analysis gave an equally unusual amount of albuminous substances. It will be of interest and importance to see to what extent future analyses confirm these results obtained by this chemist.

The Amount of Nitrogen in Red Blood-cells.—R. von Jaksch has shown (see *New York Medical Journal*, vol. lix, p. 91) that the amount of albuminous substances in blood is subject to great fluctuation in pathological conditions. Thus, while in health a hundred grammes of circulating blood contain 22.6 grammes of proteid, the amount in extreme anæmic conditions may diminish to ten grammes and even less. The question arises to what extent the blood-cells and the blood-serum are each responsible for this fluctuation. As regards the blood-serum, it has been stated in the review referred to above that except in the case of renal disorders the amount of proteid in the serum is subject to little variation. This author in a later communication (*Zeit. f. klin. Med.*, xxiv, p. 429) presents the results of a careful study of the amount of nitrogen of the red blood-cells in health and disease.

To the clinician the question is of importance whether in primary and secondary disorders of the blood a diminution in the amount of proteid is to find explanation alone in a diminished number of red blood-cells, or whether alterations of the blood exist in which the red blood-cells are changed so that they are actually poorer in proteid and hence in nitrogen. Von Jaksch finds for blood in health that a hundred grammes of moist red blood-cells contain 5.52 grammes of nitrogen, corresponding to 34.5 grammes of proteid. The results obtained from the study of blood from some acute diseases (*i. e.*, pneumonia and typhoid fever) and in certain chronic disorders (*i. e.*, heart failure, liver affections, nephritis, diabetes) show that the amount of nitrogen in the red blood-cells remains practically unchanged. Hence it appears that in these disorders any fluctuation in the amount of proteid not due to variation in the proteids of the serum depends upon a variation in the number of red blood-cells. Of even more interest are the following results: In secondary anæmias, besides a scarcity of the blood in proteid, a diminution of the total solids, and an increase in the amount of water, there is in addition an actual decrease in the amount of proteid in the red blood-cells.

In primary anæmias, on the other hand, the proteids seem to be diminished as in secondary anæmias, in

Gastric Acidity and Intestinal Putrefaction.—Mester has

examined the combined sulphates of the urine or feces, and found that the amount of chlorine present in the blood and tissues, and consequently the amount of combined sulphates of the urine or feces, is very little different in the combined sulphates of the urine or feces of healthy and diseased animals.

chlorine-free meat was allowed to undergo some putrefaction before feeding, the combined sulphates, and the ratio as well, indicated that intestinal putrefaction was increased above the normal. The final series was a control, in which the animal was fed putrid meat with an abundance of chlorine. The combined sulphates and the ratio approached the normal again.

Nuclein and Nucleo-albumin.—Hammarsten recommends (*Zeit. f. physiol. Chem.*, xix) the following classification of nucleins and nucleo-compounds:

Nuclein, to designate, after Kossel, such phosphorus-containing substances as remain in the peptic digestion of complex proteids, which further are compounds of albuminous substances with nucleic acid and yield xanthin-like bases by decomposition.

Paranuclein, to include, after Kossel, nuclein-like bodies which are formed in peptic digestion of simple albuminous substances, but which do not yield nuclein bases. Since these substances differ much among themselves, and are only similar in that they resemble nucleins in certain particulars, Hammarsten suggests that they be called *pseudo-nucleins*.

Nucleo-albumin, to include only phosphorus-containing simple albuminous substances, as, for example, casein, which are not compound proteids, and by peptic digestion yield pseudo-nucleins.

Nucleo-proteids, to include all complex proteids which by peptic digestion yield, beside simple proteids, true nucleins, and give by more profound decomposition nuclein bases. To this class belongs a compound which the author has discovered in the pancreas and calls the pancreatic nucleo-proteid. It is made up not only of nuclein in combination with an albuminous substance, but contains some third part, perhaps animal gum, which, by heating with dilute acids, yields a reducing body. Hammarsten is unable to state the exact nature of this reducing substance, though the evidence favors the view that it belongs to the penta-glucoses. The fact that this complex proteid of the pancreas is capable of yielding a reducing body is of interest in connection with the continuation of glycosuria or diabetes in patients from whom all carbohydrates are withheld for a considerable time, and whose food is hence entirely proteid in nature; it suggests a possible explanation of the origin of sugar from proteid matter.

The Urea-forming Function of the Liver.—Münzer (*Archiv. f. exp. Path. u. Pharmac.*, xxxiii, p. 164) reviews critically the literature of this important subject and presents the results of an investigation of the urea-forming function of the liver in which he with Winterberg studied twelve cases of diseased conditions of this organ.

Early investigators reported a very large amount of urea in the liver, but with more recent methods analyses show that the amount of urea contained in this organ is only proportional to the size and the amount of blood. When certain ammonium salts, particularly ammonium carbonate, are passed through the liver a synthesis with the resulting formation of urea occurs. The presence of ammonium salts in normal urine can not be taken as evidence of the existence of an ammonium compound in the liver, which is a precursor of urea, and, escaping the synthetizing transformation, is eliminated by the kidneys. The ammonia of urine is acid-neutralizing ammonia, and may be replaced by other bases, as in feeding sodium carbonate. Moreover, the urine of herbivorous animals, whose food contains little or no nitrogen, contains little or no ammonium, notwithstanding the formation of urea in the body.

In order to determine whether the liver is the chief urea-forming organ, it must be shown that after the function of the liver is removed, or after it is rendered incapable of surviving the operation for a sufficient time the urea must wholly or largely

according to Dr. Lauder Brunton, as reported by *The British Medical Journal* for July 7th. Practitioners favor chloroform in the southern United States, in Egypt, and in India, while in London and the northern United States they dislike it. There has been a marked decrease in the deaths under chloroform administration during the last few years in Great Britain. During these years the feeding of the population has been changed to an enormous extent by the increase in meat-eating due to the importation of low-priced refrigerated meats. Edinburgh has been an exception to the rule that the physicians of the colder cities do not prefer chloroform, but latterly the deaths from its use in that city have been more frequent, and gout has become less rare, both of which results may be due to the much-increased use of butcher's meat. A Russian observer has found that if the urine contains alkaloids, trouble may be expected from the administration of chloroform. This may explain why the cases which give the most trouble usually occur in strong, healthy men, who have been on a full diet, and are thus likely to have stored in their tissues a quantity of such alkaloidal products as result from meat-eating. These substances, accumulating in the blood during anesthesia, may act as a poison to cause heart failure, while chloroform, administered in the ordinary manner, tends to paralyze the respiratory center before the heart is weakened.

Circumcision and Allied Rites.—In the *Bulletins de la Société d'anthropologie de Paris* (February, 1894) Zaborowski gives a summary of various researches on the origin and different forms of circumcision. This ceremony, practiced by numerous tribes, non-Semitic as well as Semitic, is very ancient. It was carried out at the advent of puberty, the beginning of sexual adult life, the operation being analogous in both sexes. The adolescent thus entered formally into the social existence of his or her tribe. Of similar import may be regarded the initiations to a responsible status in Rome, the "first communion," the "coming of age," and the grave procedure by which, according to the custom of certain nations, and known as the "muscle dance," of recent notoriety, is only one part of the festivities which, among many peoples of Asiatic origin, usually accompany this authoritative announcement of a person's arrival at maturity. Circumcision itself has since been performed at different ages, from that of eight days to that of twenty or more years, for reasons of religious significance or of convenience, or because of the belief that the original form of the act having become obscured in the long course of time and in its transmission.

The Alleged Formation of Heat in the Salivary Glands.

Dr. Lauder Brunton, in his paper on the "Cause of Death from Chloroform," has shown that the pulse is more closely watched than the breathing. That chloroform has no direct action on the heart, however, and that it kills by inducing respiratory paralysis, is the conclusion of Surgeon-Lieutenant-Colonel Lawrie, as reported in the *British Medical Journal* for July 7th. At a recent meeting of the Royal Medical and Chirurgical Society he contended that the experiments, including those performed under the auspices of the Hyderabad Commission, proved that death from chloroform was due to respiratory failure, and that the practical point to remember during its administration was that the condition of the pulse was quite subsidiary, but that the state of the respiration should be closely watched. Chloroform being an irritant, protoplasm is irritated and destroyed by either its liquid or its vapor. When it is injected into the substance of a muscle, such as the heart or the biceps, motion is arrested in the same manner as it is by hydrochloric acid or any other irritant. He argued that in poisoning from the inhalation of chloroform this irritant action could no more take place in the heart than in the biceps, and hence might be ignored in considering the clinical question of accidental death under this anesthetic. In his experiments with animals, chloroformed blood sent to the heart alone produced no effect whatever, but when it was sent to the brain alone the narcotic acting on the brain centers produced its usual effects. From tracings of the pulse and of the breathing, he demonstrated that chloroform anesthesia without respiratory complication was free from risk.

and even ten times this amount of heat spread over blood, gland tissue, and saliva, and formed during the circulation time of a thousand grammes of blood, would be quite an immeasurable quantity. In the experiments, the blood temperature in the arch of the aorta was found the same as that in the abdominal aorta, and the temperatures of the salivary glands and tissues in a warm room and in a protected animal were often almost as high as that of the aortic blood. Considering the nature of the salivary secretion, the smallness of the salivary glands, and the amount of blood racing through the gland during activity, with the fact that arterialized blood issues from the gland veins during activity, it is considered highly improbable that any measurable amount of heat is formed in the glands. The conclusion of the experiments is that no formation of heat can be detected in the submaxillary gland by any known method of measuring variations of temperature.

The Cause of Death from Chloroform.—Heart weakness is so generally assumed to be the first warning of danger in chloroform narcosis that during the anesthesia the pulse is more closely watched than the breathing. That chloroform has no direct action on the heart, however, and that it kills by inducing respiratory paralysis, is the conclusion of Surgeon-Lieutenant-Colonel Lawrie, as reported in the *British Medical Journal* for July 7th. At a recent meeting of the Royal Medical and Chirurgical Society he contended that the experiments, including those performed under the auspices of the Hyderabad Commission, proved that death from chloroform was due to respiratory failure, and that the practical point to remember during its administration was that the condition of the pulse was quite subsidiary, but that the state of the respiration should be closely watched. Chloroform being an irritant, protoplasm is irritated and destroyed by either its liquid or its vapor. When it is injected into the substance of a muscle, such as the heart or the biceps, motion is arrested in the same manner as it is by hydrochloric acid or any other irritant. He argued that in poisoning from the inhalation of chloroform this irritant action could no more take place in the heart than in the biceps, and hence might be ignored in considering the clinical question of accidental death under this anesthetic. In his experiments with animals, chloroformed blood sent to the heart alone produced no effect whatever, but when it was sent to the brain alone the narcotic acting on the brain centers produced its usual effects. From tracings of the pulse and of the breathing, he demonstrated that chloroform anesthesia without respiratory complication was free from risk.

From much experience with chloroform, Mr. Horsley also was convinced that it was the arrest of respiration which resulted in death, and that in the majority of cases of danger inversion of the patient and artificial respiration would cause recovery. Mr. Gaskell and Mr. Shore agreed that respiration failed first, but held that chloroform had a direct action on the heart also. Dr. Lauder Brunton's experience was that chloroform always paralyzed the respiratory center before enough had been taken to paralyze the heart. A number of the accidental deaths were due, not to the chloroform, but to the operation itself, to asphyxia, or to noxious substances circulating in the blood. Mr. Lawrie concluded by stating that he had found it impossible to teach careless men to administer chloroform safely, and that heart failure might be indirectly produced by stimulation of the vagus through irritation of the larynx. He had noticed no difference in the effect of chloroform on different racial nationalities. In seven hundred cases of chloroform narcosis the pulse had been carefully watched, but it had given no reliable indications of danger.

Special Hospitals and Private Interests.—Under this heading the *Lancet* for August 4th publishes a letter from a

nice, that kissing is dangerous; but with sanitary authorities' help, and the public's consent, it would be no more difficult to put down suicide? Will love-making be conducted on antiseptic principles? 'Kissing goes by favor,' we are told—is it for the future to be by favor of the county council? Granted, no doubt, is it so, but we will leave husbands to argue with some confidence against her."

The Address in Public Medicine before the British Medical Association, at its recent annual meeting, was delivered by Sir Thomas A. Greenham. It was a long and able address in the government of modern communities the medical man played, even from a public-health point of view, a very subordinate part, and yet there were many medical men eminently fitted by their culture, experience, and ability to hold the office of minister of public health, with a seat in the cabinet. The high death-rate among the poor of cities from poor housing was especially dwelt upon. In Dublin 2,700 houses had been denuded and closed—about 1,000 of them never to be reopened—without any compensation to the owners. If a municipality was wealthy it could do no better work than providing good dwellings for artisans and laborers. The results of recent investigations in reference to the composition of sewer air showed that it was as dangerous, but probably only as fatal, to ordinary air. It could easily be understood that in the case of well-constructed and constantly flushed sewers the air would not differ from ordinary atmospheric air. It was the emanations from stagnant sewage in ill-kept sewers that were to be dreaded. There was a very general belief that typhoid fever was almost wholly propagated through the media of water, food, and sewer air; but he believed that the greater number of cases arose from the *matrices morbi* of the disease being absorbed from the air. Up to the present time pathogenic micro-organisms had not been frequently detected in the atmosphere, but neither had they been found in water, food, or air, so as to be proved to have produced disease. He believed that typhoid fever was a disease of the miasmatic class, and that it became endemic in certain localities in which the conditions of the soil were favorable to the development of the micro-organisms that caused the disease. Notwithstanding the great and continuous increase of its urban population, London has been free from the disease for several decades to a decade. Among the various influences which had contributed to bring about this exaltation of the national health the work of the British Medical Association had not been least effective.

The Origin and Spread of Typhoid Fever.—Mr. H. R. Dickinson, of the Section in Public Medicine at the recent meeting of the British Medical Association. In it evidence was adduced in support of the view that typhoid fever is a disease of the miasmatic class, more especially of the epidemic summer type, and that the specific micro-organism of the disease is not yet known. With regard to the bacteriological evidence he asked, Was it not possible that the disease might be caused by a micro-organism which is not yet known? He believed that the disease was a disease of the miasmatic class, and that it became endemic in certain localities in which the conditions of the soil were favorable to the development of the micro-organisms that caused the disease. Notwithstanding the great and continuous increase of its urban population, London has been free from the disease for several decades to a decade. Among the various influences which had contributed to bring about this exaltation of the national health the work of the British Medical Association had not been least effective.

Further, he urged that the morbid anatomy of the two conditions fully supported this contention. The epidemiological evidence tended to establish a close similarity between the respective mortality charts, and a rise in the typhoid mortality was preceded by a rise in the diarrheal. The autumnal rise of typhoid fever in the fourth quarter was always preceded by a summer rise in diarrhoea in the third quarter, quite irrespective of the varying climatological conditions of different years, and generally when one was high the other was high, and *vice versa*. Mild unrecognized types (diarrhoea, ambulatory typhoid) frequently accounted for the origin and spread of typical typhoid fever. Mild types were due to the fact that the community was susceptible to the virus in varying degrees, and there was a considerable amount of natural and acquired immunity. Personal experiences were related of mild cases giving rise to typical and fatal typhoid fever; and cases were mentioned in which antecedent "diarrhoea" had been the only discoverable cause. The chemical analysis of water remained a valuable means of gauging the probability of typhoid infection. Bacteriological methods, when applied to water, were unsatisfactory. The *Bacillus typhosus* in drinking water must always be accompanied by some fecal contamination, however slight, and this a careful analysis should detect.

Some of the Characteristics of Disease in Childhood.—At the recent meeting of the British Medical Association an interesting paper with this title was read by Dr. William H. Dickinson before the Section in Diseases of Children.

The author stated that an obvious physiological condition underlay the pathology of childhood. In the period of growth the processes of nutrition were necessarily more active than when the fabric was stationary; the demand was greater, and returned at shorter intervals, and any failure in supply was more immediately and more severely felt. Young children and boys and girls were often insufficiently fed; they wanted more than their elders, and generally got less. The substantial late meal, formerly called supper, now dinner, was perhaps not exactly suited to childhood, but there should be some substitute for it. He had often thought that schoolboys were not fed well enough, and that not from want of means, but want of knowledge. Having referred to the special need of warmth in infancy, he dealt with the effect of alcoholic drinks in childhood, and said the younger the child the more harm they did. Having dwelt upon other disorders, he said that children were more generally affected by acrid influences, whether good or bad, than grown people. The greater susceptibility of the young to malaria was well known. Pure air, and especially sea air, was, as regarded the chronic ailments of childhood, their greatest remedy; it was to be regretted that it was not more generally at their command. Papers were read before this section by Dr. W. P. Northrup, of New York, upon Intubation of the Larynx, and by Dr. Henry D. Chapin, of New York, upon A Plan of Infantile Measurements.

A New Test for Morphine.—The *Presse médicale* for July 24th publishes an abstract of a note on a new reaction by morphine, by M. L. L. L., published in the *Bulletin de l'Académie de médecine de Bruxelles* for May 26th. This reaction is said to reveal the presence of morphine and oxycodone in a solution of the liquid in the following manner. A few drops of the liquid to be examined are placed in a porcelain capsule, and then there is to be added an equal volume of a solution of thirty parts of ammonia per cent, and the mixture of sodium peroxide in 1,000 of distilled water. The mixture is then to be evaporated over the water-bath. If the liquid contains morphine, there remains a precipitate of white crystals of sodium peroxide or sodium carbonate.

knowledge of neurology, so that patients in hospitals and other institutions may have the advantage of specially trained medical attendants. I am certain that this association will welcome any general clinician who will step into our specialty, and show by the work he offers that he wishes to consider neurology a part of general medicine. I have touched upon this subject because it has for years seemed to me to point to a serious duty which every one of this association to-night might take upon himself to perform in his respective city, and every fair-minded man will pardon this slight vein of egotism as soon as he realizes that the recognition of neurological science as such will redound to the credit of American medicine.

Whether or not the general clinicians will help us in our efforts after scientific truth, whether or not they provide us with opportunities for clinical research such as hospitals alone afford, we have the satisfaction of knowing that many important discoveries have been made within the past few years in the domain of neurology, and that American neurologists contributed to this advance. As a result of what clinical investigation alone will afford, I beg you to consider the great strides made in the recognition of cerebral diseases, and to note here the happy effect of the co-operation between the clinician and the surgeon. In spinal-cord diseases accurate clinical investigation alone, supported, to be sure, by researches in morbid anatomy, has led to great precision in the distinction between the various forms of myelitis. In has placed syringo-myelia, amyotrophic lateral sclerosis, and syphilis of the spinal cord on a par with the best-known spinal-cord affections.

With the accurate knowledge that has now been acquired of the muscular dystrophies by clinical methods chiefly, we have still further evidence of what has been done in this direction. In the domain of peripheral and functional diseases important advances have been in the recognition of the association of these troubles with constitutional diseases, such as diabetes and phthisis, and their relation furthermore to organic and inorganic poisons. But as I survey the general field of neurology I am struck by the importance of a few discoveries which bid fair to inaugurate a new era in clinical neurology.

For years past the neuro-clinicians and the neuropathologists have worked hand in hand, and have developed our knowledge of systemic diseases of the brain and spinal cord. On the lines laid down by these investigations we have advanced and have become accustomed to a careful classification of all diseases of the central nervous system according to the involvement, by the morbid process, underlying them, of certain divisions of the gray matter, or of certain systems of white fibers. Amyotrophic lateral sclerosis was about the only chronic disease in which both the gray and the white matter seemed to be simultaneously affected, though the question has not yet been settled whether the gray or the white matter is invariably the first to be affected. Clinicians and pathologists have had to step aside for the time being to yield the place to the brilliant researches of the anatomists, who have not only taught us new truths but have also called a halt upon the too precise differentiation between diseases of the gray and

white matter. The careful microscopical studies of Golgi, of Ramon y Cajal, of Kölliker, and of others seemed at first to produce nothing more than an elaboration of detail in structure of the nervous system, which promised to make confusion worse confounded rather than to shed light upon our clinical studies. But the conception of the neuron which has been evolved from these studies is a far-reaching one, and one which will be certain to exert the greatest possible influence over the study of nervous disease within the next decade. It is nothing new to think of the ganglion cell as a nutritive center for the white fiber connected with it, and to know that this white fiber is apt to undergo disintegration if separated from its nutritive cell; but it is new to learn that the entire nervous system is made up of such units of nerve structure consisting of a nutritive cell, of the white fiber that emanates from one process of this cell, and of its termination in brush-like fashion. It is new, too, that these units are connected with one another not by direct contact; that the terminal arborizations approach one another without actually coming into contact; and that these neurons connect the white and gray matter, and pass freely from one to the other, or may exist even within the gray matter alone. If the nutritive cell is destroyed, or its influence over the fibers connected with it is interfered with, the death of this neuron is the natural result. While I think it is rather premature to allow this doctrine to upset our former conception of systemic diseases, and while we are not yet prepared, as one German author has already done, to speak of neuron diseases, it will help us to understand many combined diseases which we have not hitherto been able properly to explain. It will help also to a better understanding of the degenerations which follow disease of the gray matter, whether it be in the cortex or in the spinal cord, and it will help us to understand the development of systemic disease of the spinal cord, the origin of which we could not explain. The physiologists have inclined to the view that there is no such thing as a primary degeneration of the white fibers; the anatomists have now given us evidence that the position of the physiologists is absolutely correct, and it will compel us to extend our studies of all systemic diseases to the gray matter with which these white tracts are directly or indirectly connected. In the case of tabes dorsalis these anatomical researches practically compel us to regard changes in the spinal ganglia as the primary and fundamental ones, and I have no doubt that with regard to multiple cerebro-spinal sclerosis, and with the various forms of combined sclerosis, similar investigations will be needed. We can not be satisfied with the simple recognition of these systemic diseases, but must look to the original causes leading to these secondary changes in the white columns. The newer anatomical methods, particularly those of Golgi, of Cajal of Nissl, and, I am happy to say, of Van Gieson, also will enable us to carry on such studies with considerable promise of success, and they refer us once more to the necessity of exhaustive studies regarding the nerve cell, its intimate structure and connections, at the same time restoring the ganglion cell to the dignity which it occupies in neurological science until very recent years.

these recent anatomical achievements will apply the same to clinical views in neurology that have obtained any a day. Having learned in former years to differentiate between gray and white matter, we have created a gap between the two that it has widely separated uses affecting one or the other tissue. The discovery of the neuron proves once more that the artificial limits imposed by man in his study of disease do not exist in the natural order of things. In the case of amyotrophic lateral sclerosis we can now understand how it is possible that both the white and the gray matter may be affected simultaneously or successively; but the lesson will be an instructive one with regard to the relation between the spinal form of progressive muscular atrophy and the dystrophies. All of you will remember that many have been at work for many years endeavoring to establish the points of diagnosis between the spinal forms and primary muscular diseases. After clinical studies we brought face to face with the fact that the more we attempt to differentiate these diseases, the more likely we are to come upon cases which seem to fit into both categories. Spinal progressive muscular atrophy was supposed to be non-hereditary; dystrophies distinctly hereditary. The recent publications of Hoffmann and Strumpell have shown that the spinal form of progressive muscular atrophy is not only hereditary, but that it often begins very early in life. Here the conception of the neuron seems to me to come in in a very happy manner, for it points to the fact that, though the gray matter of the cord, the anterior nerve roots, and the peripheral nerves—not to mention the muscle fibers to which the nerve is distributed—were brought into an anatomical and physiological sense, they practically constitute a nerve unit, and that the same causes which act at one time upon the proximal end of this unit may at another time and in another person affect the distal portion. This helps us also to understand why, in cases of toxic myelitis, for instance, the poison should in some persons produce a form of multiple neuritis, whereas in others it causes a distinct myelitis of the gray matter of the cord, and in still other instances the poison will produce a combination of neuritis and myelitis.

The purely anatomical conception of the brain and spinal cord diseases was not only natural, but absolutely the only one for a long time to insure careful recognition of the various forms of disease of the central nervous system, and it was not finished with that method yet, for I have not yet had that new form of disease will be recognized and classified. But the time has come to seek beyond the purely anatomical and to look for the causes that lead to the various forms of disease and their distribution. In the direction of hereditary diseases, in which the attention has not long been paid to family affections the world over, seems to me to promise much for the future. When we shall have learned the actual hereditary conditions which cause the retardation or arrest or a morbid development of function of the motor-muscular system, we shall have made great advance upon our rather crude though strictly anatomical conceptions of the present day.

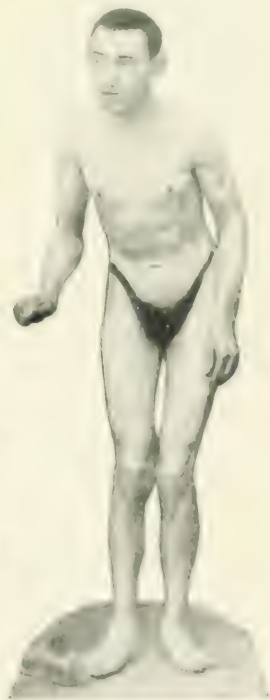
The newer anatomical studies to which I have alluded

will also have the further advantage of helping us to take a large number of diseases which we have supposed to be purely functional out of this unsatisfactory category. This is practically true of epilepsy, and I believe that it will soon be true of chorea, and possibly of paralysis agitans.

In pleading for the continuance of anatomical studies, I do not wish, however, to discourage the study of medical chemistry, and above all of bacteriology in connection with neurology, for much is to be expected from all these sciences; but do not neglect anatomy, and in order that we may further these special studies let me urge once more the great need of large clinical opportunities, and the establishment of laboratories in connection with clinical service for the advanced study of the normal and morbid histology of the entire nervous system.

If I have not trespassed too long upon your time I will venture to add a short discussion of another subject that seems to me to be of some interest, as it proves the connection between two diseases that are supposed to be entirely distinct—the one a disease due to organic changes, the other a purely functional disease. I refer to these spinal diseases for the further reason that the suspicion which is strong on clinical evidence only may soon be placed on a safe anatomical basis with the aid of the more recent methods of study. The cases I wish to refer to will help to bring out the close relationship between multiple sclerosis and paralysis agitans. That the latter is a cortical disease was rendered probable by Westphal's case in which the tremor stopped after an attack of hemiplegia. Attracted by the more pointed of these histories are as follows:

The first case is that of a young man, twenty years of age, whom I first examined in the winter of 1888. There was no history of any nervous disease in the family. The patient fell



at the age of five years and had remained stationary until he was sixteen years of age, when he was seized by a severe attack of paralysis agitans, but from the condition he recovered completely and remained with a healthy and good appearance until he was twenty years of age, when he was again seized by the disease, and remained in a state of paralysis until he was thirty years of age, when he was again seized by the disease, and remained in a state of paralysis until he was thirty years of age.

other accident. He fell from a carriage and was badly frightened. The first symptoms he noticed were pains around the left ankle, followed quickly by a shaking of the left leg. After that the arm began to shake. Five months later the same symptoms occurred on the right side. On examination I found the boy extremely well nourished; muscles in good condition; color of skin normal, but considerable vaso-motor disturbance. I was struck by the mask-like expression of his face, by the peculiarity of his speech, and by the rhythmical tremor of the hands, legs, and head, which left no doubt in my own mind that the boy was suffering from paralysis agitans.

But after a little while another set of symptoms appeared which seemed to show that this senile disease when occurring in a younger individual was subject to peculiar modifications which allied it much more closely to multiple sclerosis, a disease common in earlier life.

The boy became affected with characteristic nystagmus and scanning and tremulous speech, and all the reflexes became greatly exaggerated. At the same time he retained the characteristic tremor of paralysis agitans, the tremor involving the head, lips, and even the tongue. To this day propulsion is a very marked symptom of his condition. The hands have the characteristic position of paralysis agitans, and the contractures are very much like those seen in the senile form of this disease. He is now able to walk about very little, and with the combination of symptoms that we are accustomed to associate in part with paralysis agitans and in part with multiple sclerosis he presents a peculiar picture indeed.

The second patient is a female, aged thirty-two years, who was at one time supposed to be simply hysterical. Her present disease began fully ten years ago after a severe worryment. There was a general muscular weakness and tired feeling. She afterward met with an accident, falling down stairs, and immediately after developed a shaking and trembling in the lower extremities. Four weeks later the trembling extended to the upper extremities. Three years after that she developed the characteristic impairment of speech. At the present time her symptoms point chiefly to a multiple sclerosis. She has a very characteristic scanning speech, and the tremor becomes markedly exaggerated on intention. She has slight disturbances of the bladder and rectum, but there is no nystagmus in her case, and there is no increase in the reflexes. The condition therefore appears to be characterized by two main symptoms, tremor and scanning speech. There is no evidence of any tumor of the brain which transmits one of partial motor and the sensory deficit in the type of this disease. Since, therefore, combines symptoms of both diseases,

You could have also recognized, if combined in a much more complex way, the presence of a number of *Chrys*, who had been eating the substance of a number of scattered acorn-cupules, and you could have seen that *Chrys* will not be free to capture food from a mass of it. In fact, too, the *Chrys* found this source of sustenance, even in the night, and you could have seen the *Chrys* and *Chrys* present in all four extremities, though more markedly so in the right hand than in the left, as having fed *Chrys* somewhat, and, in fact, the *Chrys* and *Chrys* present, if combined in a much more complex way, would have been able to capture food from a mass of it.

My first realization of my personal responsibility as a parent came in the form of a handwritten note, signed David and Lisa, which said: "After reading your book, I am glad you're sorry to see the children. The problem here happened in the first place because of Daddy, not the boys. We're not good enough and there are no adults around. There are no adults to make the parents' mistakes more painful. The boys were so smart, getting out from between the pages, so early on. After this, it was just for David and Lisa. There's something to be learned."

suffering simply from nervous tremor. She returned about a year ago, and I found, to my astonishment, that the right hand trembled constantly, that she also had a distinct tremor of the face and head, and that there was a peculiar quivering about the lips. At the same time the face had acquired a distinct mask-like expression, and she walked with a decided inclination forward. I have kept her under steady observation, and now the tremor of the head, the tremor of the lips, and the mask-like expression of the face, and tendency to contracture in the right hand, and even a tendency to propulsion, leave but little doubt that this disease, which began as a multiple sclerosis, is now much more typically a paralysis agitans.

On another occasion I hope to present these cases more in detail; for the present I wish to establish nothing more than to show that a simple classification of diseases does not end our task in clinical neurology, and that diseases which we suppose to be fairly distinct often merge into each other, and that in the cases of the two diseases mentioned it will be the duty of neurologists not only to discover the anatomical basis of the one supposed functional disease, but also to establish the relation or identity of the morbid processes underlying it.

I should not have ventured, gentlemen, to weary you with the report of a few cases if they did not emphasize one of the points which I wished to bring out in this presidential address, that the tendency in neurology at the present time is not to multiply clinical types, but to establish larger groups of diseases based upon a knowledge of the causes and morbid processes which many have in common with one another.

Original Communications.

A CYST OF THE LARYNX CURED BY INJECTION OF CARBOLIC ACID.

AND A REPORT ON

MYCOSES OF THE PHARYNX AND TONSILS*

By E. FLETCHER INGALS, A. M., M. D.,

1111-5000

0.5-1.00 (0.1-1.5), 555

The following case of cyst of the larynx, because of its deep location and the fortunate results of treatment, appears to me of special interest :

Mr. D. M., aged forty-three years, came to me April 5, 1893, complaining of a sore of the throat, which he said had annoyed him, especially when talking, for about two years. He had been frequently troubled by cough, and for seven months the sore, located at the back of the throat, was present. He was very homesick and the throat trouble had not allowed him to do almost continuous earning work in his time. The mother had died of consumption, and the father, falling in the family, personal or hereditary, had a cough which seemed to consist of all the symptoms. His mother, having been a nurse, had a normal temperature and good sense. He had a normal temperature and expectorated moderate amounts of greenish mucus. The sputum was

³ Read before the American Entomological Association at its 1911 meeting in Chicago.

present; there was no dyspnea; and the digestive and secretory organs were in good condition. He complained of occasional obstruction of the nasal cavities, and upon inspection I found the right naris two thirds and the left one half closed by swelling; however, the subsequent history showed that this was temporary condition. Physical signs over the chest were normal. Upon examination of the larynx I found a large swelling of the left ventricular band and aryteno epiglottic fold, as shown in Fig. 1. This was so large that it was impossible to

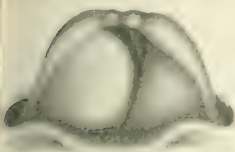


FIG. 1.

see the cord upon the left side, and the cord upon the right side was covered by what appeared to be temporary swelling of the right ventricular band. The larynx was congested about twenty-five per cent. (the normal condition being taken as a unit and the deepest congestion as one hundred

per cent.). The subsequent history showed that the congestion of the right side and of the trachea was temporary, and it was probably from the acute inflammation that he experienced the burning pain which had lasted for a week. The swelling of the left side had a smooth, uniform surface, and the appearance, excepting for the smoothness of a solid growth; the mucous membrane being uniformly congested and at no part having the lightness which we would expect to find over a cystic tumor of this size.

At first being somewhat puzzled as to the character of the tumor, and doubtful as to the best thing to do for the patient, I adopted palliative local treatment for the acute inflammation, consisting of astringent sprays which were applied once in two or five days, the patient in the meantime being given salicylic acid in doses of from fifteen to thirty grains three times a day with the hope of promoting the absorption of inflammatory products and possibly decreasing the size of the tumor. The internal and local remedies were followed up for about a month, by which time the congestion had disappeared from the right side, but the swelling of the left side remained as large as ever, though the mucous membrane had become somewhat paler and was not congested more than ten per cent. The mass was so firm to the touch that I feared it was a hard tumor, and though I expected that removal by than laryngectomy would prove of any avail. I determined, however, to try first the influence of deep injections of lactic acid. Upon the 15th of May, nearly a month after I had seen the patient, I began to inject a 10 per cent. solution of lactic acid into the cyst. Three days later I had removed the tumor, and two days later, the patient was out of the hospital. I found on making the incision that the growth had a thin shell of greenish-yellow fluid on its inner surface, and that the tumor was a cystic growth. The growth (Fig. 2) was



FIG. 2. The growth removed from the larynx.

about the size of a hazelnut, and consisted of a hard outer shell which was thin to a transparent crust. Three days after this that is within I thought a large amount of the swelling had subsided, and I found the tumor was a cystic growth. When the patient returned from the hospital I found that the

swelling was only half its former size; at this visit an astringent application to the congested mucous membrane was the only treatment. I find from my notes that the patient subsequently returned to see me about once in four or five days, and that astringent sprays were applied, but at the end of four or five weeks (June 8th) the notes state that the patient's throat was feeling badly, he was still very hoarse, and the swelling had increased to nearly its original size. At this visit I injected into the cyst six minims of an eight-per-cent. solution of carbolic acid in glycerin and water; three days later there was too much soreness to admit of a repetition of the injection, but three days subsequently fifteen minims of the eight-per-cent. solution were injected into the cyst; a week later twenty minims of a ten-per-cent. solution were thrown in; similar injections were repeated about once a week for five times, when the cyst had nearly disappeared and the injections were discontinued to ascertain whether or not it would again enlarge. He was subsequently seen at intervals of three or four weeks for three months after the last injection. On the date of his last visit my notes state that the cyst had been obliterated and there was no evidence of its recurrence. The patient felt that his throat was perfectly well. I have not seen the patient since November 20, 1893, but as at that time the larynx appeared normal, and as he had been very faithful in his treatment formerly, I feel confident that the disease was cured. I can not attribute any portion of this effect to the astringent applications nor yet to the lactic-acid injections, because it was not until I began to use the carbolic acid in strong solution that I discovered decided improvement, and then the diminution of the cyst was rapid and continuous until it entirely disappeared. From the deep-seated position of this cyst it would have been impossible to remove it by any crushing, tearing, or cutting operation short of removal of the greater portion of the left side of the larynx; therefore I felt that the patient had reason to be congratulated on the outcome of the treatment.

REMARKS ON THE HISTORY AND TREATMENT.

Although nothing new has been recently discovered in the treatment of cysts of the larynx, the temporary nature of the disease appears to be different cases for therapy, and in the treatment of those which have become permanent. During the last three years I have seen only one private patient in which removal of the affection in which the symptoms and signs were typical. One of these was not treated, and disappeared, but was not followed up. Therefore, in these cases no results can be recorded. In the other eight there was a combination of the glandular part of the disease, and the removal of the glandular part was not successful. In the other seven, and I believe in some of these, the disease was not cured. The form of treatment appears to me thoroughly satisfactory, and, although temporary, I have gained other cases, and, finally, I am giving the treatment, plus the good results, as a dependent matter, or as a remedy given the continuous form. In one of the first cases treated by the application of full strength lactic acid, no benefit was derived. In many I have at times used the lactic acid in primary form, and other powerful antiseptics, with patient suffering, and I have been unable to discover that any of them had any influence upon the disease.

The histories are as follows:

Case 1. Mrs. B. W., aged forty-eight, had complained of swelling of the throat for a month, which was followed by

the region of the tonsils; the general health was good; an examination showed several well-marked mycotic patches; cauterization was recommended, but no treatment was instituted.

CASE II.—Miss C. H., aged twenty-two years, had suffered from slight catarrhal symptoms all her life, but for two months had noted whitish patches in the throat with slight soreness; the general health was good; several mycotic patches were observed upon both tonsils. Several of these were destroyed by the galvano-cautery at two different sittings, but the result is unknown.

CASE III.—J. C. H., aged twenty-seven years, complained of catarrhal symptoms and was subject to frequent colds; several mycotic patches were found upon both tonsils, three of those upon the right side being cauterized at the first visit. The patient did not return, and the result is unknown.

CASE IV.—W. A. B., aged thirty years, male. This patient had been troubled for the last three or four years with dryness and accumulation of mucus in the throat and an irritable cough; he stated that he took cold very easily; the general health was fair; appetite not very good and digestion poor when he first came to me in July, 1890. I saw him two months later and again in the following spring, and the notes show that the throat condition remained much the same, but at that time there was no mycosis. He called upon me February 6, 1893, complaining of some trouble in the throat, which I found to be well-developed mycosis of the tonsils. He objected to cauterization. Lactic acid was applied to these patches on two different occasions, and he was recommended to continue its use, as he desired to carry out the treatment himself. My notes indicate that no decided benefit was obtained from the lactic acid.

CASE V.—Mr. E. H. F., aged twenty-three years, came to me in April, 1891, complaining of hawking and spitting, with frequent hoarseness; the general health was fair, but he suffered some from dyspepsia. I found well-marked mycosis affecting both tonsils; two or three spots were cauterized upon one tonsil, and the treatment repeated five times at intervals of a week, when the disease had been cured. I saw the patient six months later, and no recurrence had taken place.

CASE VI.—Mr. F. M. D., aged thirty-two years, had been under my care at intervals for six years for disease of the throat and nose. He came to me in the latter part of September, 1892, complaining of hawking cough and a good deal of trouble in clearing the throat, especially mornings; this, however, appeared to be due to the collection of mucus in the nasopharynx. On examination was shown well-marked mycosis of the tonsils. His general health was fair, but I found an herpetic eruption on the face. An antiseptic application was made to the throat and a fluid was taken from the nose and sent to the laboratory. The patient returned at intervals of two or three weeks, and the disease was cured. The patient returned at intervals of two or three weeks, and the disease was cured. The patient returned at intervals of two or three weeks, and the disease was cured.

CASE VII.—Mr. J. Y., aged thirty years, and having been under my care for several years for disease of the throat and nose, came to me in the latter part of September, 1892, complaining of hawking cough and a good deal of trouble in clearing the throat, especially mornings; this, however, appeared to be due to the collection of mucus in the nasopharynx. On examination was shown well-marked mycosis of the tonsils. His general health was fair, but I found an herpetic eruption on the face. An antiseptic application was made to the throat and a fluid was taken from the nose and sent to the laboratory. The patient returned at intervals of two or three weeks, and the disease was cured.

CASE VIII.—Mr. M. W., aged thirty years, came to me in the latter part of September, 1892, complaining of hawking cough and a good deal of trouble in clearing the throat, especially mornings; this, however, appeared to be due to the collection of mucus in the nasopharynx. On examination was shown well-marked mycosis of the tonsils. His general health was fair, but I found an herpetic eruption on the face. An antiseptic application was made to the throat and a fluid was taken from the nose and sent to the laboratory. The patient returned at intervals of two or three weeks, and the disease was cured.

tons in the throat; the appetite was only fair; digestion poor; general health not materially affected. Several well-marked mycotic patches appeared on both tonsils and on the base of the tongue; from two to four of these were cauterized at each of eight sittings, at intervals of about a week, when all of them had been destroyed. I have reason to believe that there was no recurrence, though the proof is not positive in this case.

CASE IX.—Mr. J. H. P., aged sixty-three years. This patient had been under my care at intervals for six years, and had consulted me for neuralgia and general debility about two months previous to the discovery of the mycosis. At that time there was no evidence of the throat disease, though the parts were carefully examined. In July, 1893, I found well-marked pharyngo-mycosis. The throat was cauterized six times, at intervals of from five to seven days, two or three spots being treated at each sitting; the disease was cured. I saw the patient six months later, and there had been no recurrence.

CASE X.—Miss S. F., aged seventeen years. This patient had been under my care at intervals for about two years, but had complained of slight soreness of the throat for only a month preceding the discovery of the mycosis, which was well developed on both tonsils. The disease was cured in four treatments, three or four points being cauterized each time, at intervals of from one to two weeks. She has not since reported, and, inasmuch as she had formerly come to me whenever the throat gave her annoyance, I believe there has been no recurrence.

CASE XI.—Mr. F. A. P., aged thirty-four years, stated that he was subject to frequent sore throat, and that he had seen yellow spots in the tonsils at intervals for several years. I found him suffering from laryngo-tracheitis, the general health not materially affected and the digestive organs normal. It is noted that at first the tonsils were somewhat swollen, with several diseased follicles, and it was not until two weeks later that mycosis was discovered. From two to four places were cauterized at each of six sittings with intervals of from five to ten days between treatments. At the end of this treatment the disease had been cured. In this case I feel confident that the disease was not present when he first visited me, but I am equally confident that it was well developed about three weeks later. There has been no recurrence.

CASE XII.—Mr. E. F. W., aged forty-one years. This patient had been under my care at intervals for several years for nasal and throat trouble, and I had seen him about six weeks before the discovery of the mycosis; at that time he did not complain of the throat, and my notes do not show whether or not it was examined; but, from the fact that he had frequent trouble with the pharynx and that it was customary always to examine his throat, I am under the impression that there was no trouble at this time. When the patient last consulted me for his throat I found him somewhat debilitated and annoyed by well-marked mycosis. Ten cauterizations were needed to destroy it. They were made at intervals of from four to six days. There was no recurrence.

An examination of these cases shows that in seven, or in fifty per cent., the patient had for many years frequently suffered from sore throat; that in eight, or sixty-six per cent., disease of the throat had been present from four months to one year; that in each one, or eight per cent., was there constant evidence of previous follicular tonsillitis. In two there had been disease of the throat; one was suffering from general debility, and the other very pronounced, and in three, or twenty-five per cent., symptoms of dyspepsia were present; but in fifty per cent. it is stated that the patient was not troubled with any of these conditions. It is shown that

in all of my cases where the throat was treated by thorough cauterization, which appears to me to be the most effective method, the mycosis was cured and I believe it has not returned in any. I am certain there has been no return of the affection in any of the patients that I have seen since the treatment.

In these cauterizations it has been my custom to destroy the diseased mass and to burn about an eighth of an inch into the tissue beneath it; to cauterize two or three patches at one time, and to repeat the operation, if convenient for the patient, two or three days after all soreness from the former operation had disappeared. In two or three cases I have given sprays of bichloride of mercury or other antiseptics, but generally have ordered nothing of the kind. Where there has been general debility tonics have been given; and where digestive disorders were present, nux vomica, the hydrochloride of hydrastine, quinquina, and papain have been commonly prescribed. In some cases I believe that the disease exists for many years before it is discovered, but in most of the cases that I have observed it has apparently been of only a few weeks' duration. In two of the cases, which were not treated more than once or twice, I am under the impression that the remainder of the disease has gradually disappeared from natural causes, because it occurred in patients who would have been almost certain to return for treatment if any white spots could be seen by them in the throat.

31 AND 33 WASHINGTON STREET.

A MONSTROSITY:

AMPHOPAGUS, LASOTROPHY OF THE ABDOMINAL VISCERA AND CLUBEET.

By JETTIE A. WESTGATE, M. D.

SECOND EDITION.

On June 5, 1894, Mrs. D. gave birth to a pair of dead twins united at the opposite earlobes. There was complete



FIG. 1

atrophy of the liver, intestines, and stomach of each fetus. These organs were united in the median line and completely enveloped, as shown in Fig. 1. The same illustration shows the position of one of the heads; the other passed down on the opposite side, in a similar manner, between the layers of the membranes enveloping the abdominal contents. Fig. 2



FIG. 2

shows the viscera with their covering removed. The placenta was single, oval in shape, and measured four inches in its longest diameter. Each fetus was enveloped in a separate amniotic sac. About a pint and a half of fluid escaped when the first sac ruptured. An hour later I ruptured the second sac and obtained about the same amount of fluid. Each fetus measured nine inches and a half in length and had one clubfoot. Age, about six months; sex, females. Head presentations.

I have the specimen preserved in alcohol. It was slightly macerated, as death had occurred *in utero* some time previous.

A STENOSING CARCINOMA OF THE TRANSVERSE COLON.

EXCISION. MURPHY-BUTTON ANASTOMOSIS (END TO END).

By MORRIS MANGES, M. D.

ASSISTANT CLINICAL PROFESSOR IN SURGERY, ST. LOUIS HOSPITAL.

AND HOWARD MILLER, M. D.

ASSISTANT CLINICAL PROFESSOR IN SURGERY, ST. LOUIS HOSPITAL.

JOSEPH C. Manges, fivefold abdominal tumor, died July 10, 1894, at St. Louis. The tumor measured five inches. The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894.

The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894.

The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894. The patient had the first tumor in June, 1894, and the second in July, 1894.

of the gut and, as each half of the button took up about an inch more of gut, six inches in all were removed. The button was a very "tight fit" in the colon. The two halves were pressed home as firmly as I could push them, but the mesocolic side formed so thick a mass that the halves of the button were here about one third of an inch apart with the mesocolon and gut tightly wedged between them. On the side of the gut opposite the mesocolon this defect was made up by the spring cup of the Murphy button. This spring gave me some concern, for I feared it might not be strong enough to hold the ends of the intestine well in apposition. At one spot opposite the mesocolon I had not cut the free ends of the gut quite close enough, and, fearing the interposition of a bit of mucous membrane, I broke Dr. Murphy's rule and re-enforced with three Lembert sutures. The excision and approximation of the gut took not longer than six or seven minutes. The abdomen was now completely closed and the patient left the table in fair condition.

On the next day the temperature rose to 102° F., then to 103° +, but there was no vomiting or other evil symptom. The subsequent progress of the case was uneventful. The patient was kept well narcotized until the sixth day, when his bowels were moved by high enema. There was tenderness in the region of the button, which, by the way, could be easily felt through the belly wall as a laterally movable body. After the tenth day full diet was permitted. The pain which was complained of before operation had entirely disappeared.

On the eighteenth day following operation, Dr. T. D. Tuttle, the house surgeon, at my direction performed massage from right to left over the colon. About two hours later an enema was followed by a stool containing the button, which, in spite of its great size, was passed without pain. The following day Mr. C. was discharged from my service recovered.

On August 16th the patient reported himself as much improved in general health. He had gained five or six pounds and looked well. He was still slightly constipated, but his bowels were easily regulated by cascara. There had been absolute freedom from pain.

Examination of the specimen by Dr. F. S. Marshall, assistant pathologist to the hospital, revealed the structure of cylindrical solid denture apparently a segmented adenoma. It was hard and flattened on one side and had closed the gut so that its lumen was only large enough to admit a lead pencil.

I cannot close this report without adding my testimony to the most sincerely-extended appreciation of Dr. Murphy's beautiful instrument. The drainage tubes and the spring cup guarding against all accident are the result of carelessness make success a matter of almost certainty.

Medical Coeducation.—Speaking at a conference at the Johns Hopkins Medical School, in the course of a speech made after the recent annual meeting of the Harvard Medical Alumni Association (*Boston Medical and Surgical Journal*, by William Osler, M.D.). "I was recently informed by a gentleman, who has had cancer formed and removed half a century ago, that he came here today with four or five new good bottles of my paint to tell you that medicine for the cancer is absolutely cured, from cancer is cured. When I ask you, and the members of the Johns Hopkins, admitted to the Johns Hopkins Hospital at the end of one day's treatment, but he is surprised that I tell you that medicine is a failure. If I tell you that the cure at the end of one day's treatment is a failure at the end of the fourth.

A CASE OF MEASLES.

WITH SYMPTOMS SOMEWHAT SIMULATING THOSE OF PHENACETINE POISONING.

By LACHLAN TYLER, M.D.

It would seem that the marvelous potency of the pharmaceutical derivatives of coal tar, at present in such general favor, should be sufficient to arouse the responsible physician to an unusual degree of alertness as to any deleterious effects upon the human organism which, when prescribed internally, they might naturally be expected capable of producing.

This proposition merits statement all the more vigorously when applied to their administration in no haphazard manner, but especially with a well-considered purpose of counteracting certain recognized pathological tendencies or conditions in existence.

Taking everything into consideration, it is quite remarkable, in connection with the therapeutics of the subject, that death in certain cases has not oftener been suspected of being the culmination of their use rather than, on the other hand, that they probably exerted the effect of at least postponing the occurrence of such a dire calamity. In short, were it not for the results obtained from the extensive experience possessed in their employment, to the contrary, it would be almost incredible that, in doses ordinarily recommended, they should be so much less liable to produce evil than good.

Amid the complexities of a given instance of disease it is practically impossible to clearly define that which may be designated the negative action of remedies employed. Observation and experience have too often avouched the efficacy of the *exclusionary* action, for example. To avoid the acceptance of many apparent favorable results from artificial sources in any other than a spirit of extreme skepticism.

Matters are different, however, with the positive influence of such medicines as phenacetine, antipyrine, or their congeners, so impressively around the good as given, in the control of febrile, neuralgic, and other morbid conditions; and a doubt might at times be momentarily excited in the mind in reference to their connection, contrarily, with certain unsympathetic phases of an illness which, although exceptionally serious in itself, might possibly still have been experienced through the medium of some *idiosyncratic* susceptibility on the part of the patient to their action.

Such a doubt, which naturally arose, however, seemed that a feeling of moral similarity, if not true, at actually demonstrated that long since had to the fulfillment of greater success about the use of antipyrine (of comparatively pure benzene-derivative) in children in typhoid fever, for instance, in which disease it was vigorously given, but infrequently in an isolated form, rendering them very free from suffering by consumption. As more properly applied and used, the truth and value of some preparations is actually able to be repeatedly administered judiciously in exhaustive doses, in even comparatively small amounts.

There was an apparent permanent cure, with entire disappearance of the detachment and restoration of useful vision, in four cases.

There was little or no reaction following puncture of the eyeball through the sclera, or after division of the detached retina and the membranous bands in the vitreous, in any of the cases. This fact I have already noticed in two papers on The Surgical Treatment of Membranous Opacities of the Vitreous previously published, the first one in the *Transactions of this society for 1888* and the second in the *Ophthalmic Review for 1890*.

Conclusions.—The following brief conclusions seem to be justified by the results of the treatment in the above cases:

1. The science and practice of ophthalmology have as yet discovered no better means for dealing with detachment of the retina than the old methods which have been advised and carried out for so many years—viz., rest on the back in bed, atropine, a bandage, and the internal administration of some drug which may induce absorption of the subretinal fluid.

2. The continued use of pilocarpine, either hypodermically or by the mouth, may cause great prostration, even in cases in which it is apparently well borne; and the desired effect may sometimes be produced by small doses of bicarbonate of sodium and iodide of potassium largely diluted with water.

3. In all recent cases puncture of the sclera subconjunctivally may do good temporarily by letting out the subretinal fluid and allowing the retina to collapse, thus producing some improvement in the vision; but the apparent improvement is generally transient, and when membranous bands exist in the vitreous no improvement can be expected from simple puncture.

4. Division of fixed membranous opacities in the vitreous causes but little reaction, and may do positive good even without division of the detached retina, as it reduces the danger of extension of the detachment. It is positively contraindicated in cases where the vitreous opacity is vascularized, as it would certainly induce free hemorrhage into the vitreous. It should never be done in an irritated or inflamed eye.

5. Division of the detached retina, which allows the subretinal fluid to escape into the vitreous, may always be done in a quiet eye, and causes little or no reaction. If membranous bands are present in the vitreous, these should also be divided at the same time.

6. In most cases of these operative procedures produce but temporary improvement, and in many cases no effect whatever is gained by them.

7. There seems no good reason for any further advancement of the method advocated by Schröder, but every reason for rejecting it from the domain of ophthalmic surgery.

CASE I. A. B., a gentleman, aged thirty-seven, had been in the latter part of December, 1888, and was then showing signs of a D. 8. He came to my office and had been blind for one hour, on the 11th day of March. For some time a year he had noticed an increase in the size and number of the vessels

from which he had always suffered, and for some weeks he had phosphenes almost constantly in the left eye. Two days before I saw him, while correcting some manuscript, the vision in the left eye became suddenly obscured, and he had not been able to read with it since. On examination, I found R. E. = $\frac{2}{30}$; with sph. — D. 8 = $\frac{1}{20}$. No improvement by cyl. gl. Vitreous hazy. Peripheral opacities in lens. L. E. = $\frac{2}{30}$; with sph. — D. 8 = $\frac{1}{20}$, eccentrically. Vitreous hazy, with fixed punctate opacities and a fine floating membrane. Retina detached in the infero-nasal quadrant and bulging somewhat tensely toward the vitreous. Peripheral opacities in the lens.

In the fundus of both eyes there was a large sclero-chorioiditis posterior completely encircling the disc, and quite extensive chorioidal degeneration all over the fundus.

There was a small irregular scotoma in the right eye, and in the left eye a defect in the field corresponding to the retinal detachment. The patient was a man of full habit, who took no exercise and suffered from habitual constipation. He was placed on his back in bed, atropine was instilled in both eyes, two leeches were applied to the left temple and a bandage to the left eye. A mild laxative was ordered to insure one loose movement of the bowels daily. Pilocarpine hydrochlorate was injected hypodermically daily, but was discontinued on the fourth day, as it produced serious symptoms of cardiac failure. In its place he was given a mixture of sodium bicarbonate and potassium iodide, largely diluted, three times a day. The pilocarpine had caused profuse diaphoresis, while the soda and potash solution produced two or three loose movements daily, so that the laxative was discontinued. At the end of three weeks of this treatment the patient had become so weak that I was obliged to let him rise from bed, and discontinue all treatment except the atropine and bandage locally. He was given tonics and plenty of good food, and allowed to walk up and down the room. The vitreous had become very clear and the defect in the visual field smaller, but ophthalmoscopically the picture was the same as before, and the detached retina still bulged tensely toward the vitreous. After a week's restorative treatment, the eyeball was punctured in the infero-nasal quadrant close to the ciliary region, and the conjunctival wound being held apart, several drops of a yellowish fluid exuded and the detachment receded. The eye was at once bandaged, and the patient kept very quiet. No reaction followed, and an examination the next day showed no detachment and a very much reduced defect in the visual field. After a week in bed he was allowed to rise and the bandage was removed. An examination showed that the detachment had shifted from a position downward and inward to one downward and slightly outward, but the vitreous was clear. The patient declined all further treatment and was obliged to resume his business of teacher, but has presented himself for examination at irregular intervals ever since. For more than a year there was no apparent increase in the detachment in spite of continued use of the eyes, but one evening, after several hours' work, the vision became very much worse, and the next morning the eye was blind. When I saw him I found a total detachment of the retina in the left eye, and this has remained ever since. The lens subsequently became entirely opaque. The right eye still remains as good as it was at his first visit.

CASE II. F. G., a gentleman, aged forty-eight years, and a teacher, was first seen on December 20, 1888. Always very myopic, and had worn the same glasses for all purposes until very recently. For about a week had noticed rapidly failing vision in the right eye and now sees with only temporal and inferior quadrants of the retina. Examination with test types, ophthalmoscope, and perimeter showed

R. E. V. — movements of the hand. Lens clear. Vitreous

very hazy. Annular sclero-chorioiditis posterior. Retraction about — D. 8. Detachment of the retina upward and inward, involving nearly half the circumference of the fundus. Tension normal.

L. E. V. = $\frac{1}{16}$; with sph. — D. 8 = $\frac{1}{16}$. Media clear. Extensive chorioidal degeneration.

The patient was placed on his back in bed, atropine instilled in both eyes, and a bandage applied to the right eye. Pilocarpine was injected hypodermically every day, and produced moderate diaphoresis. This treatment was continued for four weeks, the bandage being removed and an ophthalmoscopic examination made daily. At the end of the fourth week the detachment of the retina had shifted from upward and inward to downward and inward and was reduced in size. The patient was allowed to sit up in a chair and to walk up and down his room, but there was no further improvement; and at the end of the fifth week the sclera was punctured subconjunctivally in the infero-nasal quadrant, and several drops of a cloudy, amber-colored fluid immediately exuded. A bandage was applied and the patient kept in bed for a week. An ophthalmoscopic examination then showed the retina to be in place throughout, though the defect in the visual field still remained. The retina remained attached for nearly five weeks, and then returned directly downward. The patient could not submit to any further treatment as he was obliged to continue his work of teaching, and the vision slowly grew worse till about four months later the detachment became complete, and subsequently the lens became opaque. The left eye remained intact throughout.

CASE III.—Mrs. W. J., aged twenty-eight years. First seen in July, 1884. Always very myopic. Had never worn glasses regularly. One week ago noticed a cloud before the right eye, which has slowly increased in extent. An examination showed the following condition:

R. E. = $\frac{1}{16}$, unimproved. Lens clear. Floating opacities in the vitreous. Atrophic degeneration of the chorioid. Annular sclero-chorioiditis posterior. Retina detached in irregular folds downward and outward.

L. E. = $\frac{1}{16}$; with sph. — D. 16 = $\frac{1}{16}$ and reads Snellen No. 3 at five inches. Hazy vitreous. Extensive chorioidal degeneration, including the annular degeneration around the disc.

The patient was put to bed, atropine was instilled, a bandage was applied, and pilocarpine injected hypodermically daily. The latter was borne very well and produced well-marked diaphoresis. In ten days the retina became entirely reattached and the field was completely restored. In two weeks the bandage was removed, but the patient soon kept in bed a week longer, and then allowed to sit up. Vision had returned to its pre-treatment state. The eye became worse after two weeks and then without warning the detachment recurred. The same treatment was resorted to and with the same result. But between July 7th and October 28th the detachment recurred five times, and on the last recurrence it extended so as to involve nearly the entire fundus. The sclera was then punctured subconjunctivally in the infero-nasal quadrant, and some quantity of fluid passed out, and the detachment of it was interrupted. After two weeks and with a bandage constantly applied, the patient was allowed to rise and go about usually. The retina had remained in place, though there was still some opacity in the C. T. The eye remained attached for twenty-one days, and then recurred, involving the entire fundus, when the patient was dressed and kept in bed a week longer. I had written from the time the detachment recurred.

CASE IV.—Mr. L. E., aged fifty years. First seen November 14, 1885. Has always been very myopic. During the past two years the vision has steadily fallen. Has three

teen children, the youngest born two months ago. Just before her last confinement she noticed a clear, bladder-like body floating before the left eye. On examination:

R. E. = $\frac{1}{16}$; with sph. — D. 16 = $\frac{1}{16}$. Lens clear. Very extensive degeneration of the chorioid all over the fundus, especially around the disc. Large cobweb in vitreous.

L. E. = $\frac{1}{16}$; with sph. — D. 16 = $\frac{1}{16}$. Punctate opacities and general haziness of the vitreous. Lens clear. Detachment of the retina upward and outward, and entirely opaque. Large rent of the retina in the equatorial region upward and outward, through which the chorioidal vessels are clearly visible. Corresponding defect in the visual field.

The patient was at once put on her back in bed, atropine was instilled in both eyes, a bandage was applied to the left eye, and pilocarpine injected daily. The latter was borne very well, but after three weeks of this treatment there was no change in the appearance of the fundus. After waiting for another week, without any improvement, the detachment being in the same position, I punctured the sclera in the usual way, subconjunctivally, in the supero-temporal quadrant, and the subretinal fluid was immediately evacuated. The retina at once fell back in place, the conjunctival wound was united by a suture, and a double bandage applied. The conjunctival wound healed in twenty-four hours. The bandage was kept applied over the left eye for a week, being changed daily, and then discarded. There was no return of the detachment in this case for about four years and a half, and she was enabled to use her eyes with careful moderation for all purposes. I saw her at intervals of a few months up to April 24, 1889. The evening before, after using her strong glasses at the theater for three hours, the vision of the left eye again became suddenly obscured. The next morning I found in the L. E. V. = $\frac{1}{16}$, unimproved. Punctate and membranous opacities in the vitreous, and a detachment of the retina upward, outward, and downward, involving about three-fourths of the fundus, and this soon became total.

CASE V.—Miss E. S., aged fifty years. First seen July 3, 1885. Always very myopic from early childhood. At the age of twenty, after a long illness, she suddenly lost the sight of both eyes, from what was considered to be extensive hemorrhages into the retina and vitreous. Vision slowly returned to a useful degree in the left eye, but only partially in the right eye. In May, 1885, she suddenly noticed a large dark spot in the temporal side of the field of the left eye. An examination on July 3, 1885, showed the following conditions:

R. E. V. = fingers at six feet eccentrically, unimproved. Hazy vitreous. Lens clear. Extensive old chorioid-retinitis disseminata. Detachment of the retina downward and outward.

L. E. V. = $\frac{1}{16}$; with sph. — D. 16 = $\frac{1}{16}$. Punctate opacities at periphery of lens. General chorioid-retinitis disseminata. Vitreous clear. Structure of chorioid visible through attenuated retina. Small detachment of the retina at the extreme nasal side of fundus.

On July 14, 1885, the patient was put to bed, atropine instilled in both eyes, a bandage was applied to the right eye, and pilocarpine injected hypodermically daily. The latter was borne very well and produced well-marked diaphoresis. In ten days the retina became entirely reattached and the field was completely restored. In two weeks the bandage was removed, but the patient soon kept in bed a week longer, and then allowed to sit up. Vision had returned to its pre-treatment state. The eye became worse after two weeks and then without warning the detachment recurred. The same treatment was resorted to and with the same result. But between July 7th and October 28th the detachment recurred five times, and on the last recurrence it extended so as to involve nearly the entire fundus. The sclera was then punctured subconjunctivally in the infero-nasal quadrant, and some quantity of fluid passed out, and the detachment of it was interrupted. After two weeks and with a bandage constantly applied, the patient was allowed to rise and go about usually. The retina had remained in place, though there was still some opacity in the C. T. The eye remained attached for twenty-one days, and then recurred, involving the entire fundus, when the patient was dressed and kept in bed a week longer. I had written from the time the detachment recurred.

patient has been seen at irregular intervals ever since, and the vision and fundus have remained in about the same condition.

CASE VI.—Señor F. F., aged forty-five years. First seen July 21, 1885.

Has always had very good vision until about a year ago, when the left eye began to fail, and vision has since steadily grown worse.

R. E. = $\frac{2}{3}$ +. Media and fundus normal. Accepts + D. 1.

L. E. = $\frac{2}{3}$ 00 eccentrically, unimproved. Peripheral opacities in the lens. Numerous fine membranous opacities in the vitreous. Detachment of the retina downward, inward, and outward over nearly three fourths of the fundus.

From the presence of the membranous bands in the vitreous and the gradual impairment of the vision, it was almost certain that the original lesion had been a chorioiditis. As the other eye was normal, I thought it worth while to make a determined attempt to save the left eye. The patient was placed in bed, the eye was cocaineized, the sclera was punctured with a narrow knife in the equatorial region in the supero-temporal quadrant, and the membranes in the vitreous were all divided. A puncture was then made in the infero-temporal quadrant near the ciliary region, and considerable turbid fluid evacuated. Both these punctures were made subconjunctivally. The retina was partially replaced after the second puncture, and atropine was instilled and the eye bandaged. There was almost no reaction, and the vitreous showed no increase of the opacity; but after the first week there was no further improvement of the condition in the fundus. The detachment was perceptibly reduced in extent, but still occupied fully a third of the fundus. This patient was kept in bed for four weeks and pilocarpine administered, but he bore the drug very badly and I was obliged to discontinue it. There has been no perceptible change in this case for nearly nine years. The vitreous is still fairly clear and vision is about $\frac{2}{3}$ 00, but the detachment occupies the lower half of the fundus, and tension is decidedly below normal. The other eye is still intact.

CASE VII.—Mr. D. M., aged sixty years. First seen September 16, 1885. Always very myopic. Wore the same glasses for all purposes for more than thirty years. About three weeks ago he suddenly became aware that he had lost the sight of the left eye. For some months previously he had noticed floating specks and membranes before this eye. Is a journalist and uses his eyes constantly.

R. E. = $\frac{1}{2}$ 00, with sph. — D. 9 — 1. Peripheral opacities in the lens. Vitreous clear. Extensive degeneration of the choroid and large sclero-chorioiditis posterior.

L. E. = fingers eccentrically at extreme left of the field. Vitreous cloudy, with floating and fixed opacities. Retina detached in a large part deepened and inward, which partially obscures the disc.

The patient's general physical condition was bad, owing to his dissipated habits, and pilocarpine was contraindicated by reason of advanced cardiac degeneration. He was placed on Atropine 10 grains, three times a day, and a chloride of gold in doses of 10 grains every half hour, and counterstimulation proved decidedly necessary. After the chloride of gold there was no reaction, and I was obliged to give the food and atropine with caution. The reaction seemed moderate in the second week, and I then continued the atropine in the usual dose, but, after a half ounce, ceased the conjunctiva. There was no reaction, and I was obliged to give the food and atropine with caution. The reaction seemed moderate in the second week, and I then continued the atropine in the usual dose, but, after a half ounce, ceased the conjunctiva. There was no reaction, and I was obliged to give the food and atropine with caution.

CASE VIII.—Mr. J. P. W., aged thirty-eight years. First seen November 17, 1885.

From some cause he received an injury to the bottom of the orbit of a contusion, which produced moderate blindness.

lasting nearly forty-eight hours. Vision then began to return and slowly improved for about a year, at the end of which time he thought he saw as well as ever. What the lesion was he does not know, as he was in the interior of South America and could not reach a physician, but it was probably an intra-ocular hæmorrhage. Two weeks ago, while writing, the vision of the left eye became suddenly obscured and has remained so ever since.

R. E. = $\frac{2}{3}$ 00 —; with cyl. + D. 0.50 axis 90° = $\frac{2}{3}$ 00 +. Media and fundus normal.

L. E. = fingers eccentrically in lower and outer quadrants of the field. Floating and fixed membranous opacities in the vitreous. Detachment of the retina inward and upward over about half of the fundus.

Recognizing the original cause of the trouble as a traumatism, I was inclined to take rather a favorable view of this case. He was put on his back in bed, atropine was instilled, and a bandage applied for a week. Pilocarpine was injected hypodermically and borne very well, but produced very little physiological effect in spite of large doses. At the end of the week the sclera was punctured in the equatorial region in the supero-nasal quadrant, and the narrow knife was carried through the detached retina and into the vitreous in order to divide the membranous bands in the vitreous. The detachment collapsed at once and the eye was immediately bandaged. Absolutely no reaction followed, and though the vitreous remained cloudy there was no return of the detachment for nearly five weeks. It then returned in the same spot and to about the same extent as before. The patient was unwilling to submit to any further operative interference. I have seen him at intervals since, and the detachment has shown no tendency to extend, but the vision has steadily failed and the lens has finally become opaque.

CASE IX.—Mr. E. M., aged fifty years. First seen May 16, 1886.

Has always had what he called weak eyes, and has never been able to do any continuous work; but his vision was always good until four weeks ago, when the left eye suddenly became very defective.

R. E. = $\frac{1}{2}$ 00; with sph. + D. 0.50 = $\frac{1}{2}$ 00 —. Media and fundus normal.

L. E. = $\frac{2}{3}$ 00 + eccentrically with upper portion of the retina. T. + 1. Slight ciliary injection. Lens and vitreous clear. Detachment of entire lower half of the retina. As this was a recent detachment I decided to operate at once. The patient was put to bed and the eye cocaineized. The sclera was then punctured with a narrow knife in the infero-temporal quadrant subconjunctivally, just behind the ciliary region, and a moderate amount of turbid yellow fluid was evacuated. The detachment partially collapsed, and with the ophthalmoscope a long rent in the retina was seen downward and outward close to the ciliary region. Atropine was then instilled and the eye bandaged. Almost no reaction followed, but the patient was kept in bed and the eye bandaged for ten days. There was still a partial detachment and some haziness of the vitreous, but the vision had somewhat improved and now measured $\frac{2}{3}$ 00. Immediately after the operation the hypodermic administration of pilocarpine was begun. The patient bore it very well and it was continued for two weeks, but without producing any effect upon the detachment of the retina, which still remained. The eye remained in about the same condition for two years, and then the vision grew steadily worse, fixed and floating opacities appeared in the vitreous, the tension was at times increased and at times diminished, and eventually the lens became opaque and vision sunk to perception of light. Before the cloudiness of the lens prevented

ophthalmoscopic examination there was no further extension of the detachment noticed.

CASE X.—Mr. G. B., aged forty years. First seen October 20, 1886.

Always very myopic, but vision was always good until eight months ago. At that time he received a violent blow on the right eye which was followed by decided inflammatory action, and since then the vision has been very defective. Two weeks ago he was struck by a flying chip of stone in the left eye and lost the sight of that eye immediately. Since then vision has returned in a part of the field.

R. E. = $\frac{1}{20}$, unimproved. Small nuclear cataract. Lens in place. Floating opacities in the vitreous. Extensive degeneration of the choroid.

L. E. = $\frac{1}{20}$; with sph. — D. 5 = $\frac{1}{20}$ eccentrically. Faint opacities in the lens. Membrane in the vitreous. Fluttering iris. Lens in place. Detachment of entire lower half of the retina.

The patient was placed in bed, atropine was instilled in both eyes, and a bandage placed over the left eye, and no further treatment was instituted till the irritating effects of the injury had subsided, which occurred in about three weeks. The vitreous was still so cloudy that puncture was deemed unwise, and pilocarpine was then injected daily for three weeks, the atropine and bandage being continued. There was a decided improvement in the media, the vitreous becoming markedly clearer, and the chorioidal process being apparently arrested. Two months later the membranous bands in the vitreous and the detached retina were divided from below by a very narrow knife through a subconjunctival incision. A few drops of turbid fluid exuded, but there was no collapse of the detachment, and all further treatment was given up. This eye remains in practically the same condition to-day, after a lapse of nearly eight years, vision being $\frac{1}{20}$ unimproved by a glass.

CASE XI.—Mr. H. K. La F., aged fifty-four years. November 26, 1886.

Has always been myopic, but has never worn glasses, and has overworked his eyes all his life. In April, 1881, he suddenly discovered that he was totally blind in the left eye, and on consulting an oculist he was told that the retina was detached. In May of the same year the vision of the right eye became suddenly very defective, so that he could only see with the extreme outer angle of the field, and here also there was found a detachment of the retina. He was kept on his back in bed for two months, atropine was instilled in both eyes, and the right eye was kept bandaged most of the time. He also had numerous hypodermically every other day of some drug, which was probably pilocarpine, as it induced profuse perspiration. The vision began to improve first in the left eye, and subsequently also in the right eye, and at the end of six months he was able to read again with the right eye. In 1886 another detachment of the line of detachment was noticed. I was told by a friend that the right eye was detached by the doctor, and that the left eye was detached by the doctor. I am not sure of this, but I am sure that the vision was nearly entirely opaque. Fundus invisible. T. — 1.

L. E. = $\frac{1}{20}$ eccentrically. Detachment of the retina in the upper and lower quadrants. T. — 1.

It was told that nothing could be done for the left eye, and that it was very doubtful whether anything could be done for the right eye. The patient was very anxious to have the vision of the right eye restored, and he was very anxious to have the vision of the left eye restored. The patient was very anxious to have the vision of the right eye restored, and he was very anxious to have the vision of the left eye restored. There was very little reaction to the wound healed readily, and

two weeks after the operation a moderate detachment of the retina was discovered downward and outward. As the capsule stretched and gaped and the vitreous grew clearer, very extensive degeneration of the choroid was seen, but there were no fixed bands of adhesion in the vitreous. Vision slowly improved, so that eventually with a sph. + D. 4 he could see $\frac{1}{20}$, but beyond this it never rose, and he has never been able to read any printed type. The eye remained in about the same condition till his death five years later.

CASE XII.—Mr. J. H., aged thirty-six, lawyer. First seen on December 1, 1886. Always very myopic and vision very defective. Some time in the spring of 1886 he woke one morning and found the vision nearly gone in the left eye, and was told that he had detachment of the retina. In October, about two months before I saw him, there had been an operation performed upon the left eye, which proved unsuccessful in restoring any useful vision. Examination showed that an iridectomy had been done upward in the left eye.

R. E. = $\frac{1}{20}$; with sph. — D. 6 = $\frac{1}{20}$. Hazy vitreous. Extensive degeneration of the choroid, especially around the posterior pole of the eye.

L. E. = $\frac{1}{20}$ eccentrically, unimproved. Lens clear. Vitreous very hazy, with floating opacities. Retina detached downward, outward, and inward. Coloboma iridis upward.

I advised the usual treatment in the supine position in bed, with atropine, pilocarpine, and a bandage, but he was not willing to submit to the confinement, and went away. In 1889, while in a distant city, the retina became slightly detached in the right eye, and the left eye, which had become entirely blind, was enucleated on account of the condition of the right eye. He consulted me again on the 28th of June, 1890, and I found in the right eye V. = $\frac{1}{20}$, which by sph. — D. 5 was improved to $\frac{1}{20}$. The lens was clear, the vitreous was quite hazy, and the retina was detached downward and outward.

He was treated for nearly four weeks by rest in bed, atropine, a bandage to the right eye, and pilocarpine hypodermically, but the latter was discontinued on the fourth day, owing to very grave symptoms of cardiac failure. There was a decided improvement of the vision and in the detachment, which, however, lasted but three weeks. The latter then returned and involved more of the fundus, and I advised an operation. The sclera was punctured subconjunctivally downward and outward, and a few drops of fluid came out, but no effect was produced upon the detachment, and the vision gradually sank to $\frac{1}{20}$.

CASE XIII.—Mr. W. J., aged forty-three years, farmer. First seen February 2, 1887. Always myopic. Put on glasses for the first time six years ago. About a year ago he suddenly lost the vision of the right eye and it has never returned. There is a constant dull ache in the eye, which at times becomes severe. An examination showed:

R. E. = $\frac{1}{20}$ eccentrically, unimproved. Lens cloudy at periphery. Vitreous very hazy, with floating opacities. Retina detached upward, outward, and downward. Vision about $\frac{1}{20}$ of the field.

L. E. = $\frac{1}{20}$; with sph. — D. 4 = $\frac{1}{20}$.

The patient was told of the condition of his eyes, and he was told that nothing could be done for the right eye, and that it was very doubtful whether anything could be done for the left eye. The patient was very anxious to have the vision of the right eye restored, and he was very anxious to have the vision of the left eye restored. The patient was very anxious to have the vision of the right eye restored, and he was very anxious to have the vision of the left eye restored. There was very little reaction to the wound healed readily, and

here very extensive degeneration of the choroid was found. But before the treatment was discontinued, the opacity of the vitreous again returned and vision was reduced to the standard at which it had been before the operation. No apparent effect was produced upon the detachment, which about a year later became total.

(To be continued.)

MASTOID AFFECTIONS:

THEIR COURSE AND MANAGEMENT.

By VINCENT GOMEZ, M.D.,

BROOKLYN.

BEFORE entering into the consideration of this paper permit me to call your attention to some of the important anatomical features of the middle ear.

To begin with, it is an air containing space, and lined throughout with mucous membrane which is continuous with the mucous membrane lining the naso-pharynx. The component parts which form this structure are the Eustachian tube, the tympanic cavity, and the mastoid cells.

The Eustachian tube is composed of an osseous and a cartilaginous portion. The narrowest portion of the tube corresponds to the point of union of these two parts. Its direction is obliquely outward, backward, and slightly upward, with a very obtuse angle opening downward. Its tympanic orifice opens in the anterior and superior portion of the tympanic cavity; its pharyngeal orifice is much wider, and situated at seven centimetres from the opening of the anterior meatus of the nose. The cartilage of the tube only exists in its internal and its superior borders. The mucous membrane contains throughout ciliated epithelium, the movements of the cilia being from the tympanic cavity toward the pharynx, thereby acting as a means of drainage and impeding any micro-organisms from the pharynx invading the tympanic cavity. The membrana tympani is a delicate, semitransparent, gray, pearly membrane, adherent to the handle of the malleus. It is circular, and one centimetre in diameter; its thickness is about one two hundred and fiftieth of an inch. It is situated at the fundus of the external auditory canal, and forms, in unison with the inferior wall of the external canal, an obtuse angle. Its internal wall is concave, its external wall is convex, and separates the cavity of the tympanum from the external auditory canal. The layers which compose it are three in number, and are, viz., first, an epidermic or dermoid layer; second, a fibrous layer; and third, a layer lined with pavement epithelium.

The tympanic cavity consists of two parts—the anterior, which lies right behind the membrana tympani, and the attic, which lies above the quadratus tympani. The communication between these two parts is by a narrow passage, situated at the anterior end of the handle of the malleus, and called the isthmus. And having seen these have but a slight communication, with some swelling of one or partly even that this space can become shut off, this becomes a strong factor in middle-ear pathology.

The mucous membrane lining the tympanic cavity is

very thin and delicate, and is usually made up of tessellated epithelium.

A little above, continuous and posterior to the attic, we find the mastoid antrum, affording communication between the mastoid cells and the tympanic cavity.

The mastoid cells consist of one large, irregular aperture and several smaller ones, situated at the upper part of the posterior wall. These cavities vary considerably in number, size, and form. They are lined with mucous membrane, continuous with that covering the tympanic cavity.

Now we shall take up the individual mastoid affections.

Primary periostitis of the mastoid process occurs but very seldom. Periostitis is usually secondary to both acute and chronic inflammation of the middle ear, the process traveling outward from the tympanum until the covering of the mastoid is reached. The bony portion of the external auditory canal is much shorter in early life, hence this affection is more frequently met with in young people.

The usual symptoms which occur are pain, redness, and œdema over the mastoid; the pain is usually of a severe and sharp character, and there is marked tenderness on pressure over the mastoid.

The pain sometimes radiates over the whole side of the head. If the attack be of a severe character there will be some fever or elevation of the temperature. The tongue is usually coated, and the patient will feel quite ill. The rule is that pus forms sooner or later. If left to itself the scalp may be undermined with pus, or the pus may burrow along the course of the sterno-cleido-mastoid muscle. The discharge from the external auditory canal is usually of a purulent character, and the marked fœtor of it is frequently observed.

In the treatment of this affection it is usually wise to resort at first to antiphlogistic measures, such as the use of a brisk purge, Leiter's ice coil applied constantly over the mastoid or frequent applications of iced cloths, painting with pure tincture of iodine or a saturated solution of nitrate of silver, or applying two or three active leeches, and rest in bed; at the same time the external auditory canal and adjacent parts must be kept scrupulously clean by the use of a solution of bichloride of mercury (1 to 5,000) or a 1-to-40 solution of carbolic acid. If the discharge has any factor the use of peroxide of hydrogen usually does good. If by these means we accomplish no good, then we may resort to making a Wilde's incision. A stout scalpel is introduced near the lower border of the mastoid, penetrating at once to the bone, extending the incision upward parallel to the auricle and about half an inch behind for about two inches. In making the incision, note whether you can detect any roughness; if there is, it usually indicates necrotic or carious bone. Even if no suspicion exists of the bone being involved, it is usually wise to explore the incision with a probe, to see if any rough or soft bone is present, or a fistulous opening may be detected in this way. We may have as a complication cellulitis, giving the sense of fluctuation, but still when the incision is made no pus is found. The division of the tense tissues and the bleeding in these cases does often give great relief. A good antiseptic wash may be used

daily to cleanse the wound: this may be done by means of the syringe. The wound should be kept open until nothing remains of the disease, and pain has entirely disappeared from the mastoid and its immediate vicinity. Granulations at times make their appearance along the edges of the wound, these usually can be got rid of by means of lunar caustic or clipping them off with scissors.

Allow me now to divert your attention to the affection known as mastoiditis.

Primary mastoiditis occurs but very seldom, and, as said before, it is usually secondary to inflammation originating in the tympanum. This inflammation usually occurs by continuity of the muco-periosteal lining.

The swelling of the soft parts may very decidedly resemble simple mastoid periostitis. In some cases there will be destructive inflammation, giving rise to pus formation and perhaps caries or necrosis of the bony partitions between the cells, so that in this way the whole mastoid may be converted into one large cavity, and it still may go on destroying bone until the larger part of the whole temporal bone is destroyed. In other cases a sclerosis of the bone may occur which may convert the whole mastoid into a solid bony mass of ivorylike consistence. The pain in mastoiditis is usually due to confined pus pressing upon the branches of the trigeminus. Hyperæmia will also act in this manner.

Mastoiditis is not likely to occur during a very acute stage of a tympanic inflammation, or at least not until the disease has made some progress. In severe cases of acute inflammation of the tympanum the periosteum of the meatus near the membrana tympani may become invaded; this may be separated from the bone and deprived of its nutrition, and by so doing it becomes carious. If this condition of affairs occurs in the posterior superior quadrant it is likely to affect the mastoid cells. Furuncles of the meatus may also invade the periosteum at this portion of the meatus, and extension may occur into the mastoid cells.

In periostitis of the mastoid process caries may occur and destroy the underlying bone and extension into the mastoid cells may occur in this manner.

The symptoms of mastoiditis are both subjective and objective.

We may have a case of acute inflammation of the tympanum, but the affection does not disappear after ordinary methods of treatment have been used. There will be persistent pain about the ear, but usually restricted to the mastoid region. There may be some irritation of the meninges, such as vertigo, sleeplessness, nausea, elevation of temperature, sometimes an irregular shivering, sometimes a chill, sometimes a fever. The pain is usually more marked during the night.

Objective. The most signs of a paratiditis will be present. The position of the ear is usually characteristic; it stands out at right angles to the axis of the head. Tenderness to the touch is pronounced over the mastoid in case of bone, cellular, duct, and caries.

Swelling and bulging of the posterior superior quadrant of the membrana tympani or a festoon perforation in this

same region, are two very suspicious signs of mastoiditis, and we should always be on our guard when we have them.

The prognosis of mastoiditis is usually a guarded one. Remembering that a quarter of all cerebral abscesses are due to middle-ear lesions, the prognosis depends largely upon the direction in which the necrosis has occurred, and the danger of the rupture occurring in an inward direction. In acute cases, when there are no threatening symptoms, we should at first resort to other means of treatment before operating, at least for a few days. We may use locally heat or cold, usually Leiter's ice coil, counter-irritation by means of blistering with cantharidal collodion, or the application of two or three active leeches; at the same time the most thorough antiseptic precautions, such as syringing of the external canal and tympanum. Rest in bed is also of prime importance.

We will next consider the indications for trephining or opening the mastoid as laid down by Schwartz. In cases of acute inflammation of the mastoid process with retention of pus in its cells, when œdematous swelling, pain, and fever do not subside after treatment with ice or Wilde's incision. In cases of secondary inflammation of the mastoid process, every cause for retention of pus in the auditory canal and in the tympanum should be removed. In this manner alone appearances of inflammation of the mastoid not seldom take on a retrogressive course, even where they are accompanied by quite threatening symptoms—high fever, continued pains in the head and neck, and infiltration of deep-lying cervical tissues. But this improvement is in most cases only temporary, and in the course of weeks or months a change for the worse takes place which finally renders the operation necessary.

In cases of externally healthy mastoid, where there is retention of pus or the formation of a cholesteatoma in the middle ear, and which can not be removed through the natural channels. In cases where the mastoid process, externally healthy and without retention of pus in the middle ear, is the seat and starting point of continual and unendurable pain, for relief of which all other means have failed (bone neuralgia). As a prophylactic operation against lethal conditions, where we have a putrid discharge from the middle ear, and no other symptom of pus in the middle ear (pain, fever, etc.) exists other than the intense penetrating factor of the purulent discharge, in spite of the most careful cleansing and antiseptic irrigation through the external and tympanic canals, and fistulotomy tube.

The Operation.—A day or a few hours before the operation the patient should be given a thorough bath. Preliminary to the operation the skin over and around the process should be thoroughly washed with soap and water and wiped dry; then the mastoid is shaved in about three inches away from the meatus. The posterior region, the neck and side of the head should be washed and scrubbed with a brush in a way thorough manner, and the parts are dressed with a clean antiseptic collodion, and washed with alcohol so as to remove any grease which may be present, followed by a 1 to 2 per cent. iodine solution. The external canal should protrude, be irrigated with a 2 to 5 per cent. solution, and plugged with sterilized cotton.

Towels soaked in a sublimate solution, 1 to 1,000, are placed in the following manner: One is tied around the patient's head so that no hair from the scalp can penetrate, one underneath, and one on each side. It is well also to put around the patient a rubber apron, so that the clothing is not soiled with blood, etc. Others use a Kelly pad, placing the head on it.

The instruments should be scrubbed, and subjected to boiling for at least half an hour, when they may be dipped in alcohol, and finally laid on a tray, where they are immersed in a solution of carbolic acid, 1 to 20. The operator's hands and those of his assistants should also be thoroughly sterilized.

The incision can be made from above downward, or *vice versa*. A great many prefer to commence at the apex, because in this manner, I believe, there is less danger of wounding the blood-vessels of the neck. The incision is carried from the apex upward half an inch behind the auricle, and parallel to the auricle for a distance of two inches.

It is best to try to cut down to the bone at once and make the entire incision by one movement of the knife. This done, the periosteum being divided, bleeding points are sought for and controlled with artery forceps, or the bleeding vessels are ligated. The periosteum is now separated by pushing backward and forward with a rasp until we get a good view of the bone; retractors will have to be used in order to accomplish this. The bone is now carefully examined for caries, soft spots, or fistulous openings. If they are found they usually serve as a good guide to select the place to open the bone. If none of these conditions are found, we choose our place for opening the bone right behind and close to the posterior wall of the bony canal. Its upper border is not usually higher than the superior wall of the external canal. The opening should extend forward and inward, and when we are near to the antrum it should be made somewhat upward, following at the same time and parallel to the posterior wall of the canal; by doing this we can usually avoid opening into the middle cerebral fossa or wounding the lateral sinus.

Bezold recommends opening the lower extremity of the mastoid, so as to completely open both the outer and inner surfaces of the digastric fossa. For removing the bone many operations are described and contrasted. When using the chisel or gouge it is well to frequently pass in a probe, or the finger, to determine what progress has been made. After the external table has been successfully removed, which will vary from one sixteenth to one fifth of an inch, unless we have to deal with a sclerosing process, when the thickness will be greatly greater, the table may be broken by means of a probe or chisel. After we have opened the mastoid to about a quarter of an inch and we do not encounter any difficulty, we may direct the chisel more forward, when we will be able to chisel into the attic, and going on forward, pulled by a probe, open into the antrum.

Sometimes the lateral sinus is accidentally opened in our endeavor to open into the mastoid table. The hemorrhage from such an accident is somewhat troublesome, swelling out very rapidly. It usually can be controlled by means of a cotton tampon, and at least seldom serious, and

dent as it may seem. After the antrum has been opened successfully, all portions of spicules and necrotic or carious bone should be thoroughly removed by means of a sharp spoon, any granulations which may be present should be scraped away, and the bone should be evenly smooth.

The whole wound should be thoroughly cleansed and syringed with a sublimate solution (1 to 1,000). Recurrent drainage should be secured through the tympanum, so that any discharges which may accumulate may have an exit. The external canal should also be syringed with a sublimate solution (1 to 1,000). The parts are now dried, and the wound packed with iodoform gauze, covered with a good thick layer of sterilized cotton, the whole being held in place by a bandage.

The after-treatment is usually conducted on general principles. It consists of cleansing by the use of antiseptic syringing, and packing with iodoform or sterilized gauze every two or three days. The length of time elapsing between each dressing must be governed by the amount of suppuration and the condition of the patient. If there is much reaction after the operation the patient should be confined to his bed for a greater length of time. The wound should be kept open until all suppuration has ceased from the tympanic cavity and the artificial canal. If during the process of healing the patient at any time should have pain or fever, the wound should be carefully explored for confined pus. If any should be found, it must be evacuated at once, and the wound irrigated with some antiseptic solution. Granulations form at times, obstructing the egress of fluids from the tympanum. These must be destroyed by means already advocated. The duration of the process of healing is usually from two weeks to two months.

The most recent advance in middle-ear surgery is Stacke's operation modified by Schwartz.

Stacke's operation is as follows:

The cutaneous incision is somewhat different from the so-called Wilde's incision. The lower end is more curved and extends to the mastoid apex, and the upper part is kept closer to the auricle and carried well around to the front. The bone is bared and the meatus is separated from the posterior wall and its internal attachments severed. With a gouge of small size the superior wall of the bony meatus is chiseled away and the malleus and incus removed. The superior wall must be chiseled off near the insertion of the membrana tympani. The posterior wall of the meatus is next chiseled until the antrum is fully opened. In this way Stacke converts attic, antrum, and meatus into one large cavity.

An easier way for accomplishing this is described by Allen, of Cincinnati, and quoted by J. E. Sheppard in a pamphlet on The Surgical Pathology of the Mastoid Process. The antrum is first opened as in the old operation. The membranous meatus is then dislodged from the posterior and superior walls and held forward against the anterior wall by a one-pronged retractor. A bridge of bone now separates the meatus from our opening into the antrum. We now chisel away this bridge of bone, the piece removed being triangular in shape, the base external, the

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.

Published by
J. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 1, 1894.

FOOTBALL FROM A MEDICAL POINT OF VIEW.

At a recent meeting of the American Physiological Society Dr. Henry G. Beyer, of the navy, read a paper entitled Football and the Physique of its Devotees, from the Point of View of Physical Training. The paper appears in the September number of the *American Journal of the Medical Sciences*. Dr. Beyer thinks there is about an equal amount of exaggeration in the dangers and disadvantages alleged to result from the game and in the beneficial influence of the sport maintained by its advocates. He mentions a very considerable number of deaths attributed to the game recorded by the *Lancet* and by the *Medical News*, and adds the comment that it would be more satisfactory if these accounts had been accompanied by statements as to the number of players and as to the circumstances under which death or serious injury has been traceable to the game or to the evils that accompany it. Nevertheless, so far as bare facts go, he says, the opponents of football seem to have the best of the argument, and it is incumbent on the advocates of the game to produce, if they can, facts calculated to neutralize those adduced on the other side. To aid in determining the effect of football on the physical condition Dr. Beyer has made observations on several players from the University of Pennsylvania, from Princeton College, from Lafayette College, from Franklin and Marshall College, from Rutgers College, and from the Naval Academy. He has found this sort of investigation of a visiting football team, he says, an unusually difficult undertaking, for the members, anxious about the result of a contemplated match game, are quite unwilling to submit to being measured to the extent necessary for obtaining accurate and valuable results an hour or so before the game begins; it is simply useless, he adds, to inform them that it can not possibly hurt a man in training for football to squeeze and pull about a few manometers. Moreover, in such cases he had to work rapidly, and he remarks that in all quick work there is danger of more or less sacrifice of accuracy. Therefore he gives

the following summary of his observations:

The players of the game were measured and weighed before, during, and twenty-two years. The points noted related to stature, weight, lung capacity, heart rate, etc. The observations were made at the University of Pennsylvania, at Princeton College, at Lafayette College, at Franklin and Marshall College, at Rutgers College, and at the Naval Academy. Dr. Beyer says that he had not expected to find such a large number of players who were not in training for football, and that the results of the measurements were not as accurate as he had hoped for. He says that the results of the measurements were not as accurate as he had hoped for. He says that the results of the measurements were not as accurate as he had hoped for. He says that the results of the measurements were not as accurate as he had hoped for.

training was observed to be accompanied by a decided increase of weight, averaging in seventeen players 7.9 pounds, and in twenty-five other players 7.2 pounds. As regards the effect on the lung capacity, the examinations of seventeen players showed in all but two instances that there had been no change. The two exceptional cases were those of half-backs, who had to do a great deal of running during the game. In twenty-five other players an average increase of 3.9 per cent. in lung capacity was observed, however, together with an average increase of 14.2 in total strength. The method of ascertaining the total strength is obtained by multiplying the weight of the subject, expressed in kilogrammes, by the "dip" and the "pull," dividing the product by ten (to prevent too great a number of figures in the calculation), adding the strength of the back, the strength of the legs, the average of the forearms, and the lung strength. All this is illustrated in the paper at sufficient length. The average increase of the total strength of seventeen players was found to be 16.4, and that of twenty-five other players 14.2 per cent. In both series of observations there was a decrease in the vital index. The vital index is obtained by dividing the lung capacity, ascertained by means of a spirometer and expressed in litres, by the weight of the individual in kilogrammes.

Dr. Beyer thinks that these observations, if they prove anything, show plainly that, while football can not be considered the best game in the world, and much of its vaunted superiority is due to popular clamor conjured up by the newspapers, it must, nevertheless, be considered as one of the best games extant. While it must be admitted, he adds, that accidents may occur on account of the game, in spite of all proper precautions, it is, nevertheless, also true that, were all the circumstances surrounding the recorded cases of death known, they would all be found traceable to gross carelessness of one kind or another. So far as his own observation goes, all the injuries produced on the football field, in games played by gentlemanly and well-matched players, have been amenable to treatment and have resulted in perfect cure. Dr. Beyer concludes by emphasizing the precaution mentioned by President Warfield of making the medical director in charge of physical training in colleges omnipotent to exclude from the game boys who are unfit to engage in it by reason of certain physical conditions or injuries.

THE ETHICS OF HOSPITALS.

The *Lancet* for August 11th publishes a letter, signed "Gynecologist," headed The Chelsea Hospital Appointments, in which the writer seems to be deploring the fact that obstetric physicians are supplanting pure surgeons in the institution mentioned. He says: "Hospitals which are flooded with obstetric physicians and general practitioners who operate without undergoing special training in surgical work everywhere produce the same result." He adds the striking comment: "Abdominal surgery has lived on statistics, and will probably end by being devoured by her own children."

In the same number of the *Lancet* there is a leading article on The Ethics of Hospitals, the text of which has to do with the

THE FAUNA OF CORPSES.

A book on this subject, by Dr. P. Méguin, has lately been published in Paris. It is of a medico-legal character, and deals with the insects that prey upon dead bodies, the *travailleurs de la mort*. Various kinds of these insects, it seems, make their appearance at definite points of time, so that a knowledge of the order, etc., of their coming will, it is maintained, enable an investigator to determine the length of time that has elapsed since death took place, provided it does not exceed three years.

PROFESSIONAL SECRECY IN BELGIUM.

The *Gazette médicale de Paris* states that a judicial decision given in Brussels is to the effect that a physician is never obliged, except in cases where the law expressly orders to the contrary, to reveal secrets confided to him in his professional capacity, even if the person who intrusted them to him consents to their being laid before a court.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 28, 1894:

DISEASES.	Week ending Aug. 21.		Week ending Aug. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	24	8	26	3
Scarlet fever.....	20	1	22	3
Cerebro-spinal meningitis...	0	0	0	1
Mumps.....	37	1	13	1
Diphtheria.....	109	26	110	35
Small pox.....	2	0	9	0
Total.....	161	106	153	124

Changes of Address.—Dr. S. C. Baldwin, from Helena, Montana, to Salt Lake City, Utah; Dr. M. S. Kakels, to No. 814 Lexington Avenue; Dr. Charles Hutton Knight, to No. 147 West Fifty-seventh Street; Dr. Edward N. Liell, to No. 109 West Eighty-fourth Street.

Army Intelligence.—*Official List of Changes in the Station and Duties of Officers Serving in the Medical Department, United States Army, from August 15 to August 25, 1894.*

WILSON, WILLIAM H., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on the expiration of his present duty at the Fort Thomas Rifle Range.

PRICE, CURTIS E., Major and Surgeon, upon the expiration of his present duty at Alton, is ordered to Fort Supply, Oklahoma Territory, for duty at that station, relieving CORBUSIER, WILLIAM H., Captain and Assistant Surgeon. Captain Corbusier, on being relieved by Major Price, is ordered to New York city, N. Y., for duty as Attending Surgeon and Superintendent of the Medical Officers' Hospital, Warren G. Carter, and Assistant Surgeon. Captain Corbusier, on being relieved by Major Price, is ordered to New York city, N. Y., for duty as Attending Surgeon and Superintendent of the Medical Officers' Hospital, Warren G. Carter, and Assistant Surgeon.

MEANS, EDGAR A., Captain and Assistant Surgeon, will be relieved from duty with the commandant appointed for the inspection and ranking of the boundary between Mexico and the United States and authorized from Myers, Virginia, for duty as Acting Physician, and C. Carter, and Assistant Surgeon. Captain Phillips, on being relieved, is ordered

to Fort McKinney, Wyoming, for duty at that post, relieving BUSHNELL, GEORGE E., Captain and Assistant Surgeon. Captain Bushnell, on being thus relieved, is ordered to Davids Island, New York, for duty, relieving ROBINSON, SAMUEL Q., Captain and Assistant Surgeon. Captain Robinson, on being thus relieved, is ordered to Philadelphia, Pa., for duty as Attending Surgeon and Examiner of Recruits.

PHILLIPS, JOHN L., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect on or about September 1, 1894.

BREWER, MADISON M., First Lieutenant and Assistant Surgeon, is granted leave of absence for three months, to take effect on or about October 1, 1894.

CORBUSIER, WILLIAM H., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on being relieved from duty at Fort Supply, Oklahoma Territory.

WILSON, WILLIAM H., First Lieutenant and Assistant Surgeon, will be relieved from temporary duty in the Department of Dakota by the commanding general of that department when his services are no longer required with troops in the field, and will return to his proper station.

BRADLEY, ALFRED E., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Five Weeks ending August 25, 1894.*

BAILHACHE, P. H., Surgeon. Granted leave of absence for five days. August 3, 1894.

HAMILTON, J. B., Surgeon. Granted leave of absence for five days. August 16, 1894.

SAWTELLE, H. W., Surgeon. Granted leave of absence for five days. August 12, 1894.

GASSAWAY, J. M., Surgeon. Granted leave of absence for two days. August 11, 1894.

STONER, G. W., Surgeon. Granted leave of absence for seven days. July 28, 1894.

IRWIN, FAIRFAX, Surgeon. To proceed to Brussels, Belgium, for special duty. July 24, 1894. To Rotterdam, Netherlands. July 27, 1894. To proceed to Hull, Liverpool, and other English ports on special duty. August 9, 1894.

MEAD, F. W., Surgeon. Granted leave of absence for thirty days. August 4, 1894.

BANKS, C. E., Passed Assistant Surgeon. To proceed to Halifax, N. S., for special duty. August 16, 1894.

GLENNAN, A. H., Passed Assistant Surgeon. Granted leave of absence for six days. August 14, 1894.

BROOKS, S. D., Passed Assistant Surgeon. To proceed to Duluth, Minn., and Superior, Wis., as Inspector. July 24, 1894.

WHITE, J. H., Passed Assistant Surgeon. Relieved from duty at Savannah, Ga., and ordered to report to the medical officer in command of the service at New York for duty. August 6, 1894.

CARRINGTON, P. M., Passed Assistant Surgeon. To proceed to Evansville, Ind., for duty. August 6, 1894.

KENYON, J. E., Passed Assistant Surgeon. To proceed to Budapest, Austria, to represent the department at the International Congress of Hygiene and Demography. August 14, 1894.

VANDERBILT, G. T., Passed Assistant Surgeon. Granted leave of absence for six months. August 1, 1894.

WHELAN, C. E., Passed Assistant Surgeon. To report at Boston for instructions. August 4, 1894. To proceed to Cape Charles Quarantine

I need not ask you, sir, whether your opinion coincides with that of Mr. Browne, because you would probably not have extended to us the hospitality of your journal if you had considered the charges we brought so "paltry" as to be unworthy of Transatlantic publication, but I should be greatly obliged to you if you would in an editorial addendum to this letter state your views as to the *ethical* aspect of the whole question. A reply to that effect, it is true, has already been given by the editors of two of your English contemporaries—viz., the editors of the *Lancet* and of the *Glasgow Medical Journal*. Dr. Newman raised a protest against Mr. Browne's literary methods in these two journals, limiting himself strictly, however, to the perversion of his own statements of which Mr. Browne had been guilty. A controversy in both journals followed, which in both instances was ended by editorial notes, which I here verbatim append:

Editorial note in the *Glasgow Medical Journal*:

"We publish Mr. Lennox Browne's letter, but must at the same time express regret at its tone and method. Dr. Newman pointed out that Mr. Browne, in what he cites as an *exact* quotation, alters an important word, thereby changing the meaning entirely. Mr. Browne does not deny altering the word, and we are convinced that his contention that he has not altered the meaning is not made good. When an author who is citing a case as cancerous from the onset states that at one period he believed it to be innocent, it is altering his meaning entirely to substitute 'demonstrated' for 'believed,' and to make it appear that he still believed it to be innocent at the time of the first examination. Mr. Browne's further claim that Dr. Newman was at one time an adherent of the opinion that such innocent growths may by surgical interference be transformed into malignant tumors seems to us to be equally devoid of foundation. The passages quoted by Mr. Browne from Dr. Newman's writings show that the latter believes in the transformation of innocent into malignant growths, but we have not discovered a single word favoring the idea that he ever believed that instrumental interference is an element in producing such transformation. The long quotations in which Mr. Browne indulges are thus entirely wide of the mark and do not bear out his contention. We have made these remarks without consulting Dr. Newman, and simply to bring back the reader to the points in dispute, which Mr. Browne obscures in a cloud of words.

"EDITORS G. M. J."

Editorial note in the *Lancet*, July 14, 1894:

"*.* The matters in dispute between Dr. Newman and Mr. Lennox Browne have been much simplified by Mr. Browne's last letter to us. It will be seen that he expresses regret for substituting one word for another in quoting or abstracting a report of one of Dr. Newman's cases. We highly approve of this apology, and only regret that it did not come sooner. It is always incumbent in public controversy, in quoting an author, to do so with absolute accuracy, using only the *expressed* words; but the various readings which occur between public men arise from the misapprehension of the other man. The fact of course must be that in matters so grave as that of cancer, a mistake in one of the critical words is fatal. It is quite open to Mr. Browne to agree in favor of the case from the published case of Dr. Newman, and any other fair-minded man who does not adhere to the present interpretation of the statement of this case will be satisfied. We are not asked upon the case, and we are not asked to give our opinion upon the case of the most serious and different question of persons who have been presented to the profession by historical events and controversies of recent times. If such a correspondence is that we have published nothing, anything, it settles this: that even from an expert view there is much difficulty in defining the course of professional duty in a given

case, and that in any given case much responsibility will rest on the general advisers of the patient. We can not devote further space to this correspondence.—ED. L."

Now, sir, although the editors of both these journals, as you and your readers will have seen from the foregoing notes, have spoken plainly enough, their judgment refers, as it were, to one third only of the evidence which I have laid before you and your readers. My charges are even more serious than Dr. Newman's, because from them it appears that Dr. Newman's case does not stand alone, and that Mr. Browne has in fact resorted to a perfect *system* of misrepresentations of the facts of his opponents. I can not believe that Americans should judge less severely of breaches of literary good faith than their English *confères*.

What I, with a slight variation of Dr. Newman's words in his letter to the editors of the *Lancet* of July 7th, wish to know is this: Are medical ethics merely nominal, and good enough to be preached to students in introductory addresses, but "paltry" enough to be with impunity disregarded in practice, or is there a moral obligation on the part of every member of the profession to truly render the exact meaning of the unambiguous words of other writers?

FELIX SEMOS.

. We coincide entirely in our English contemporaries' comments on this controversy, and can not consent to its further prolongation in our columns. In our opinion, it goes without saying that ethical principles are good for nothing if they are not to be lived up to, and that an injurious misquotation, even if it is made by accident, should always be acknowledged promptly and without evasion.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 29, 30, and 31, 1894.

The President, Dr. WILLIAM T. LUSK, of New York, in the Chair.

(Continued from page 123.)

The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids.—In the discussion of the president's address on this subject Dr. WILLIAM M. POLK, of New York, thought that the tendency was in the direction of myomectomy as against hysterectomy. It was really an easy matter to remove the uterus when it was found that no other operation would answer the purpose; but the retaining of the uterus was of paramount importance. A working organ was what we should all try to save to the woman. He was decidedly in favor of myomectomy, and thought that it was quite as feasible and safe to remove through the peritonæum as through the vagina. Another point, a pyosalpinx did not necessarily mean that ovulation could not go on, and that therefore it was proper to perform oophorectomy or hysterectomy.

Dr. BAKER was in favor of complete removal of all the generative structures; no uterine tissue should be left, for fear of leaving a nidus for tuberculosis. The burning question was that of myomectomy as against hysterectomy; but then there would be an uncertainty of complete removal of all diseased tissue, particularly if done by the vagina. Certainly, when removed by the vagina the condition of the appendages would not be known. He was of the opinion that if removal was to be attempted at all, it should be done by the abdomen, where visual examination of the parts could be carried on. Myomectomy

make much of an effort to get rid of it at once. He would make a final plan for general palliative measures to be given a rational judgment of the uterus. Where the hæmorrhage was not controlled, abdominal section would have to be resorted to.

Dr. MALCOLM McLEAN, of New York, was satisfied that specialism had its dangers, and that the mad race of rivalry had dwarfed the minds of many and had therefore made it dangerous for patients. This statement could be applied to the operation of laparotomy for rupture of the uterus, where, in so many instances, the child had been saved by palliative measures which could have been applied by the attending obstetrician. Palliative treatment was the proper procedure in almost all the cases. Given a case of labor which had been progressing favorably and all at once there was a sudden recession of the presenting part, rupture should be suspected, for this was usually one of the first signs. The speaker did not favor version, but where the child had escaped above the pelvis it was hard to apply the forceps, and the hand would have to be introduced into the pelvis and some part of the child grasped and brought down, at the same time the condition of the wound explored. If the intestines or the placenta and the contents of the bag of waters had escaped into the abdominal cavity, then the woman should be given a chance for her life by an abdominal section. The preconceived idea that rupture of the uterus required laparotomy was a very great mistake, for, with reasonable and judicious assistance, Nature did much to restore a torn uterus and check hæmorrhage. Where recession of a presenting part took place action must be prompt, so as not to allow of the complete escape of the child and the formation of a large hæmatoma, which would greatly hinder the successful doing of a laparotomy if it was finally necessary. He reported a case where the child had been pushed through a rent with the membranes intact and surrounding it and completely shutting out from the peritoneal cavity any fluid that would otherwise have escaped into it. There was no doubt that there was a distinct field for palliative treatment of rupture of the uterus.

The PRESIDENT, speaking from his personal experience, said that in incomplete rupture situated in the posterior wall of the uterus there was no doubt that palliative measures were the proper thing. He had always found that, if the tear was situated anteriorly, the case terminated fatally. Where the rupture was complete, wishing to give every woman a chance, he would feel better if he brought together the peritonæum and closed up the wound, as for sewing up the uterus, it was a fallacy and a snare. Where the women recovered without having this much done, they were invalided; they would seem to be well for a time, but their existence would be shortened. He did not think much of Porro's operation in this class of case. He advised a general incision of the uterus, where the tear was considerable and the haemorrhage continued, as offering the best results.

Dr. W. B. BARRETT, of New York, said that the subject ought to be divided into two parts, rupture of the uterus, and rupture of the ovaries, which had to be treated in the same manner. There was nothing in any other situation, excepting in the posterior wall low down, where he feared, on his speaking of a possible removal of the uterus.

Dr. F. B. FROST, of New York, said that the subject of the uterus was a very difficult one, and he had no doubt that the best results were obtained by a general incision of the uterus, where the tear was considerable and the haemorrhage continued, as offering the best results.

Dr. F. B. FROST, of New York, said that the subject of the uterus was a very difficult one, and he had no doubt that the best results were obtained by a general incision of the uterus, where the tear was considerable and the haemorrhage continued, as offering the best results.

and this would be found hard to do through the vagina. Although he had frequently irrigated through this passage, when he had found it necessary to open from above he had discovered that the water had not cleansed the abdominal cavity at all. In the main it was better to deliver by the natural passages if possible, but to make a small opening and cleanse from above. Where the uterus was much mutilated he favored complete removal.

Dr. MURRAY said that the cases should be treated according to whether they were complete or incomplete tears. He had seen four cases, two of which had been fatal and two had ended in recovery. In the first case the symptoms had been normal up to a certain point, when all at once the pains had ceased and the physician had delivered with forceps. Everything had seemed to be right for some hours, when the patient sank into collapse.

An examination disclosed rupture into the broad ligament. The abdominal cavity was opened, and the peritonæum found very much thickened and oedematous. The tear was nearly two thirds around the cervix and up through the broad ligament. On account of the condition of the peritonæum, it was found impossible to remove the uterus with safety. It was thought, considering the condition found, that palliative measures would be the best, for, with the operation and shock, the patient could not survive. The next case had presented pretty much the same conditions, but had come under notice too late to make palliative treatment effective. The other two patients had been saved by palliative measures entirely. Where the rupture had taken place into the peritonæum, it was better to open the abdomen and drain.

Dr. McLEAN wanted to have it borne in mind that, if the fetal membranes were intact, even if the rupture had been into the peritonæum, they were protective of infectious material being introduced, and the case ought to be treated differently under those circumstances. The simple oozing of aseptic blood into the peritoneal cavity would do no harm.

(To be concluded.)

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

ASSISTANT SURGEON, MANHATTAN ISLAND AND EAR HOSPITAL.

Malformation of the Aorta. *Tyrie (Ann. of Anat. and Physiol., April, 1894)* has found the following strange malformation of the aorta.

The arch and descending aorta were uniformly dilated to a point immediately above the origin of the celiac axis, where the vessel became abruptly constricted to the size of the subclavian artery and, maintaining this caliber, descended to the middle of the fourth lumbar vertebra, where it bifurcated into the common iliac, the right placed anterior to the left. The celiac axis, two inches long, divided into the hepatic and coronary. From the right branch of the former a trunk descended to the corresponding kidney, passing anterior to the suprarenal body. The splenic had an independent origin from the aorta. The suprarenal glands arose from the third space from the posterior aspect of the aorta. The right and left suprarenal arose from the fifth anterior aspect and the left aortic suprarenal from the right posterior aspect. The left renal artery arose from the third space from the posterior aspect of the aorta, one from the common iliac, and one from the descending aorta. The right renal artery arose from the third, two

the strained ligaments. The length of time for which it is necessary to protect the joint from extreme motion, will vary according to the amount of reparative power, the degree of violence, and the age; but there seems to be no justification for the popular notion that a sprain is worse than a break, a notion that appears to be based upon the over-cautious treatment of such injuries, which, by interfering with the proper circulation of the part and with guarded motion, increases the sensitiveness and produces a condition which, if unchecked, may give rise to such a disability of the joint as will be more tedious than that due to an ordinary fracture. This condition is what is seen occasionally in joints that are stiffened simply from disuse. The condition following a strain is somewhat analogous to that of the soft parts near a fracture—the circulation is interfered with, there is a certain amount of soreness on motion, and the muscles and ligaments are strained. In the treatment of sprains we should not be influenced by what Verneuil has said of phobias; a sprain is not a fracture; at most it is a tear of some of the fibers of certain ligaments, and this unites readily. Pain is the natural check to an excess of motion. Fixation by apparatus can be necessary only to stop the pain for a short time after a severe sprain. In the early stages motion short of causing pain is harmless; in the later stages motion and use should be allowed up to the point of pain; and in some instances, in highly sensitive persons, guarded and protracted motion, even beyond the point of pain, is indicated. Compression may be useful for a short time during the period of effusion, but after that it becomes injurious. As a means of improving the circulation, applications of heat and cold and friction are needed from the first, and the use of the limb, when it can be resorted to without causing pain, is a natural means of improving the circulation and nutrition.

Kneippism.—Suggestion has been practiced by all "curers," whether knowingly or not, and it is enveloped in mystic and religious practices or masked by various procedures of therapeutics. A "curer" who is at the present moment very much the fashion in the Baarman coast Kneipp. His method is well known, but a letter published in the *Normandie médicale* for August 1st may be of some interest. The writer says: "I am surrounded with a swarming population of paralytics, ataxies, epileptics, people with drops, people with cancer, and people covered with wounds and deformities. All of them are badly clothed, and their feet are bare; the women are without corsets, the men without undershirts; in fact, it is a veritable scene of miracles. All or nearly all of them have faith in the priest, and, consequently, the hope of recovery. This faith is something great, good, for the treatment, but it is something such that there is something in the priest's mode of treatment. It must be said that faith alone can not bring about the cure of those affected with lupus; but the priest cures them all, or nearly all. His treatment does not consist alone in applications of iodine, but in a series of things which I cannot describe. He gives them beer or wine, and, above all, no alcohol or coffee. With regard to the water, he says that it is very good. The repeated contact with water causes a violent reaction and a subsequent resolution of the disease. He says that he has seen

open air and an eminently strengthening diet, consumes the noxious constituents of the blood and reconstructs the organism. All this is logical and sound, and in order to appreciate and observe its full effects, it must be practiced on the spot. Some cures are extraordinarily rapid. M. Monseigneur Kneipp, as he is called since he has been made the Pope's chamberlain, is dissolute, and his consultations are so numerous—more than a hundred and fifty a day—that I do not believe in his special intervention in each particular case. Before the patient goes to him, however, another physician is consulted, who makes his diagnosis, and assists on the following day at the sitting, and under his direction M. Kneipp prescribes. There is something very interesting, combined with a certain infatuation, attaching to the religious and disinterested character of the priest; but there are also many patent results, and one must recognize that a considerable effort is made to strive against the modern manner of living, which is so contrary to the functions of the human body."

Necrotic Acne.—At a recent meeting of the *Société de dermatologie et de syphiligraphie*, held in Lyons, a report of which we find in the *Journal des praticiens* for August 11th, M. Dubreuilh insisted upon the identity of the acne pilaris of Bazin, the acne varioliformis of Hebra, and the acne necrotica of Boeck, which, he says, differ only in intensity. The favorite seats of necrotic acne are the face, the temples, the nose, the forehead, and, more rarely, the cheeks and the ears, under the form of points which appear in successive crops. After these eruptions scars are sometimes produced, consequent on suppuration or impetiginous eruptions. M. Dubreuilh considers the fundamental lesion to be a mummifying necrosis of the skin, very probably of microbic origin. As to treatment, he usually advises the following ointment: Benzoinated lard, thirty parts; potash soap, precipitated sulphur, each, five parts. Inunction with this mixture is to be practiced daily; and in a few days the eruption may be found to be resolved.

Fatal Peritonitis following Orchitis due to Mumps.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 12th gives a summary of a history of a case, by M. Hornus, published in the *Archives de médecine et pharmacie militaires*, 1894, No. 7. During an epidemic of mumps a soldier, twenty-two years old, presented himself with a double orchitis. It was not due to gonorrhea, and he had never had the least venereal infection. It had come on after a few colicky pains followed by an abundant movement of the bowels. Both testicles were affected in an equal degree. The temperature was 103° F. Topical treatment was prescribed for the orchitis, but as early as on the second day it was found that the patient had peritonitis, which carried him off in forty-eight hours. At the autopsy the testicles were found transformed into purulent collections with no longer a trace of seminiferous tubules. The spermatic cords were bathed with pus, which continued beyond the inguinal canal. The intestinal coils and the epiploon were covered with purulent and fibrinous deposits. There was nothing wrong with the other organs.

The Administration of Potassium Iodide.—A writer in the *London Medical Journal* remarks that potassium iodide is better taken at the end of a meal, but that it may be administered during or after a meal to avoid its coming in contact with the mucous membrane of the stomach and so being absorbed too rapidly. The following solution, said to be prepared by Professor Loomis, contains fifteen grains of the iodide to the 100 grains of sugar, thus, hundred and fifty parts. Each cubic centimetre contains five parts of potassium iodide, twenty-five parts.

Lectures and Addresses.

THE TEACHING OF ANATOMY.

By WILLIAM KEILLER, F. R. C. S. Ed.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF EDINBURGH,
FORMERLY LECTURER ON ANATOMY IN THE SCHOOL OF MEDICINE,
EDINBURGH, SCOTLAND.LECTURE I.—THE PLACE OF ANATOMY IN THE MEDICAL
CURRICULUM, AND DIFFICULTIES IN TEACHING IT.

It has long been the custom of physicians and surgeons to use the medical journal not only for the discussion of recognized methods of treatment, but also for giving publicity to their own special modes of procedure; indeed, it may be said that the egotism of each writer is one of the main elements that gives life and individuality to his writings and conduces to change and to progress in his practice. If, conformably with the customs of my clinical brethren, I shall in the following pages give special prominence to my own methods of teaching, I shall hope to escape the charge of mere egotism and be credited with some enthusiasm for my subject itself and desire for its advancement.

It seems well to take a preliminary glance at the position anatomy ought to hold in the medical curriculum. It is now fully recognized everywhere that all medicine and surgery must have a thorough knowledge of anatomy and physiology as their basis; but while no physician or surgeon will deny this, it might give a better stimulus to the medical student to acquire with diligence these difficult preliminary subjects, did the chairs of practice of medicine and of surgery lay more emphasis than is usually done on these points in diagnosis or in operative work. Too few of our physicians and surgeons keep up these subjects themselves, and when a student finds that his teacher of medicine or surgery either has forgotten his anatomy and entirely avoids anatomical points, or alludes to them with that cursory and careless notice that is worse than complete neglect, he very easily comes to consider the anatomist and physiologist very nice fellows, but cranks after all, and regrets that it was absurdly necessary to waste so much valuable time on subjects which may be forgotten with impunity. It is unnecessary to say that on a particular knowledge of anatomy and physiology rest all pathology, physical diagnosis, and intelligent surgery. Further, anatomical facts are not only difficult to acquire, but are still more difficult to retain in one's memory, and there is no anatomical knowledge of any value, unless it be practical. A man may know the whole of Gray by heart, and yet be no anatomist. The subject therefore, deserves a place in the curriculum proportionate to its importance, and we should admit of its claim and steadily acquiescent and acquiescent by practical acquaintance with the dead body. In a three years' medical course at least two hours daily should be devoted to anatomy during the first and second years, and in the third year—that the student may be enabled to review the facts he has already acquired—a session of the first examination should be devoted to medical and surgical

anatomy. No dissecting should be done at night. The very fact of the practical anatomy being relegated to gaslight and to the night, when the student is fatigued with the day's lectures, diminishes its importance in his eyes. Of this I shall have more to say by and by; at present I would only insist that in a three years' course two hours a day, during the hours when daylight is always available, should be devoted to anatomy, and that of these at least six hours a week should be devoted to dissecting. In a four years' course at least two hours daily during the first and second years should be devoted to dissecting, one hour daily to lecture demonstration such as I shall presently describe, and a special course should be given in the third year on applied anatomy. In a three years' course each student should dissect the whole body once; in a four years' course he should dissect the whole body twice, the second practical course taking the form of dissection to expose special structures and otherwise having more of a surgical tendency.

Having touched upon its place in the curriculum, let us consider the difficulties in the way of teaching this branch of medical education.

The first difficulty encountered by student and teacher is that in most cases at least the student comes totally unprepared for the study. To begin with, few students have any knowledge of Latin or Greek, and it is hard for any one who has had a classical training to realize how difficult it must be for men who do not even know the declension of Latin nouns to commit to memory anatomical names. Should we for this reason adopt the English equivalents? Such an expedient would give us some uncouth and unscholarly combinations. The short supinator might pass, but the "larger round" or "larger cylindrical muscle" would be a sorry substitute for the *teres major*, not to speak of "the larger anterior straight muscle of the head" for the *rectus capitis anticus major*. In spite of modern "practical" tendencies, it will never be possible to dispense with an elementary knowledge of Latin and Greek as an essential stepping-stone to each of the "learned professions," and it must be our aim not to reduce the standard of medical terminology to the deficient educational attainments of our students, but rather to raise the educational standard of our institutions by requiring a knowledge of Greek and Latin in our entrance examinations. With the rapid progress of education all over the United States this should soon be possible.

Then it is exceedingly difficult for the lay being from the usual school course, but much more so for the young man from country occupations, or the store or office, whose mind has been for some time out of training, to get into the mental attitude necessary for the assimilation of anatomical facts or their acquisition and retention. Instruction in many of our schools should extend over a period, not merely in theory, general theory, or biology, and of these three, biology is perhaps the most important, and, as well as anatomy, zoology, and botany, and physiology, as more both of animal and vegetable life.

Then the basis of physical life will be established and the

eye trained to observe, the mind to collect, arrange, and picture to itself details of structure.

We can never expect to turn out men of a high educational standard till our matriculants are required to possess such a literary and scientific training as I have indicated.

I would have all our great schools create a scientific section, in which an elementary training in Latin and Greek (if not previously acquired), and, as preparatory for a medical education, an elementary course of physics, chemistry, and biology should form the stepping-stones from the general education of the school course to the special education of the medical curriculum.

Students from the country could then be required to take a year in a high school before entering college. One would thus limit the number of matriculants; but it is surely quality—not excess in quantity—we want in a profession that has to deal with the health and life of the community.

Again, it seems to me that the practice in many schools of keeping the systematic lectures and the practical course apart—the lectures being delivered by the professor, the practical course being entirely in the hands of the demonstrator, not to speak of the custom of dissecting at night—raises serious obstacles in the way of the proper teaching of anatomy. In every large, well-equipped medical school there are four chairs whose occupants ought to be required to give their whole time to the subjects and debarred entirely from practice, the emoluments of the chairs themselves being accordingly high—namely, chemistry, physiology, pathology, and anatomy. Each of these subjects ought to have thorough practical courses, which the students should attend in sections; and each professor should be free from the trammels of medical practice, that he might be able to conduct these classes personally and carry on original investigations in his special subject. In anatomy it is especially necessary that the lecture course and dissecting go hand in hand, and to that end it is essential that the dissecting be under the personal direction of the professor.

It is further necessary, especially in a three years' course, that the students be so divided into sections that each shall receive lectures on the part he is about to dissect. The student receiving a course of systematic lectures on, say, the muscles of the arm, at the same time that he is dissecting the leg, and, long before he can verify the textbook description by his own observations, makes it exceedingly difficult for him to keep up his work, even where his studies extend over four years and he is long protected by a multiplicity of subjects in the minimum of time.

With regard to dissecting at night, it is possible to combine the lecture and practice, without a system where the first year's student takes his whole curriculum of lectures in the first year, attending the dissection afterwards, or, as is now the case, to have the student, from the first year on, attend the lecture and practice alternately, so that he can keep up the dissection the following year. Here, it seems, there could be no excuse for the student's neglecting his dissection, and, if he should neglect it, he would be sure to be detected, and, if he were not, he would be sure to be detected by the faculty.

range into dollars, and substituting for it an ignorance more dangerous because possessed of some scientific terms, stock prescriptions, and the magic letters M. D. Many of such schools are now on a higher level; many, however, are only wearing the mask of a three years' graded course, but wearing a mask only, as they still permit (or require) their students to take out the whole course of lectures the first year and repeat them the second and third years. This can not be called a graded course. But why keep up the practice of dissecting at night? Where is the student's time for reading if he attends lectures all day and dissects from seven to nine every evening? Shall we plan our course of instruction so that our students shall of necessity be degraded into mere cramming machines, and we ourselves be no teachers, but professional crammers? Truly, we run the risk, even in a strictly graded three years' course, of manufacturing, not intelligent, thinking men of science, but living phonographs. Speak to them and they receive, turn on the examination handle and they talk more or less glibly; but too many of them are phonographs, not minds, rule-of-thumb physicians, not independent thinkers. Judging from what I have seen in the South, our students are fine fellows, hard workers, and thoroughly in earnest; let us not overcrowd them with lectures. The three years' course should consist only of essential subjects, so carefully arranged that there may be sufficient time for practical work—laboratory and clinical—during the day, and the evenings may be left clear for reading. Special subjects should be left to a post-graduate course. That the dissecting should be left to the sole supervision of the demonstrator is bad in every way. It is bad for the professor, for no man can go on giving clear, vivid, masterful lectures on anatomy long after he has ceased dissecting, no matter how well he may once have known the subject. A lecture on anatomy should give the student a vivid picture of the main features of the region described; it should not only present to his eye and understanding what is to be seen, but it should tell him how to see it for himself, and how to remember it when he has seen it; and who can do this three years after he has left the dissecting room? Further, the lecture must be the guide, the introduction to the dissecting table, and this can only be so when the same mind is the guiding spirit in each department. Nor can any demonstrator, unless he be also an examiner, maintain complete control over a large class of students; and if there is any class where complete control is necessary to good uniform work it is in the dissecting room. And one man can not supervise more than thirty dissectors. My demonstrator and I have the greatest difficulty in superintending efficiently sixty men dissecting at the same time. We have work enough for several junior demonstrators. Lectures, then, are nowhere without personal dissection; we can sooner dispense with the former than the latter, and let us have at least six hours weekly, during the best hours of the day, devoted to practical anatomy. I insist on six hours as the minimum, and these are only those sufficient if made thoroughly available by some such system as I shall detail in another paper.

One obstacle in the way of thorough, painstaking dis-

Lastly, among the difficulties in teaching this subject is the difficulty of giving a systematic course of lectures with all their dry details that shall keep the students from going to sleep. During the first year students know too little to appreciate "practical points," and, after all, one has to travel through much stiff detail before one is refreshed by a few points of practical interest. Diagrams help considerably to fix the attention. Lecturing to a class comes from the dissected specimen. If some of the students, one or two men like the dissection, the rest can not see, and hence make an effort to attend. I have largely got over this difficulty by moving toward the dissecting table first and last. My lectures are really my lectures, and are divided up into sections according to the organs and are dissecting, and the lecture to-day is the guide to what the student is to do in the dissection. The lectures are supported by numerous illustrations drawn on the blackboard before the student, as I speak, and are studied from that of his notes a lecture or half a day, shown a diagram, he makes an important point in the next day's dissection. I have written numerous my lecturing, at San Francisco, from a

¹ David R. Foray, *Antitrust and Intellectual Property* (Cambridge, MA: MIT Press, 1998).

to the transversalis fascia. The sac should be opened and the intestine replaced. In the thin sac the suture should be passed with a needle around its neck like the puckering string of a pouch, and two thirds of the sac, or a little more, cut away, the stump inverted with forceps into the abdominal cavity, and the ligature tightened. This secures the stump within the abdominal cavity and prevents dimpling of the peritonæum. A single stitch or two across the neck of the sac is now necessary. The muscles should be carefully dissected up from the transversalis fascia a distance of an inch and a half either way from the internal ring. The internal ring is a hole in the transversalis fascia. This hole is enlarged by the pressure of the intestine. In order to sew up this internal ring the edges of the fascia should be denuded, and then for half an inch to an inch on either side of the ring two parallel longitudinal incisions should be made (or, in cases where the fascia is thick and adherent to the sac, it can be included with the ligature and inverted with the sac into the abdominal cavity). It will then be easy to bring the fasciæ together over the stump. The fascia should be stitched with interrupted fine wire sutures. Over this fascia should be placed loops of silver wire if the opening is large. The silver wire should be knotted in several places to prevent slipping. Four or five of these loops, two to three inches in length, will suffice. The cord should be raised from the canal and the loops passed underneath the cord from the internal to the external abdominal ring. Over these loops of silver wire or catgut the transversalis muscle is carefully stitched with interrupted sutures, the cord being brought through the muscle direct. The first layer of wire or catgut should run transverse to the inguinal canal. Over the transversalis muscle another layer of wire loops is passed, extending at right angles to the deeper layer between the transversalis fascia and the internal oblique. Each one of these loops of wire is stitched to the muscle to prevent it from slipping. Over this layer of wire the internal oblique is carefully stitched with interrupted sutures. The cord should be brought through the internal oblique muscle. The external oblique is stitched together, and if there is a thick layer of superficial fat of two or more inches, the wound is dressed open; if there is but little adipose tissue, the wound is closed. A small drainage tube or two strands of catgut should be inserted down into the sac when the sac has been inverted into the abdominal cavity; but when the sac has been cut away, one strand of catgut passing to the deeper layers of the wound, another for drainage.

Drainage should be performed at the end of the third day. Usually but little inflammation occurs, and thus far I have seen no suppuration. In those cases of thick, large sacs which have been inverted into the abdominal cavity the second method of dressing with the sac and pressure, together by means of the silk ligature (see Figs. 14, 15, 16, etc.), is necessary to introduce a small incision, which is stretched out, and at the bottom of the cavity, where drainage tube should be removed at the end of three days. In these cases the sac should be thoroughly scarified on its peritoneal surface. This will stimulate a fibrous, cicatricial, and calcareous tissue, which a

thick, large sac is drawn up behind the peritonæum (see Figs. 19, 20), by means of a catgut ligature (the third method of dealing with the sac), a drainage tube or strands of catgut should be inserted in this sac for two or three days, and the scarification of the peritoneal surface before the sac is stitched up, and before its introduction into the abdominal cavity, should be very thorough and extensive. Adhesions will then rapidly form between the sac and the abdominal peritonæum. It is very easy to pass a ligature from within this large sac to the small opening which has been made in the abdominal cavity above. The incision in the sac before its introduction into the abdominal cavity should always be closed by means of catgut sutures. The mouth of the sac should be stitched together with one or two interrupted sutures, not sufficient to cut off the circulation of the sac. When the sac is treated in this manner, the wound is treated precisely as has already been described.

I have devised a curved cannula and needle to pass the catgut ligature through the abdominal walls from within the peritoneal cavity out, thus avoiding an incision and saving time. It is a long curved needle inside of a curved cannula carrying the catgut.

I will now briefly explain the illustrations which are appended to this paper.

Fig. 1 shows the position of an oblique inguinal hernia.



FIG. 1.

Fig. 2, an incision which has been made over this tumor—the sac being in full view. This is the usual in-

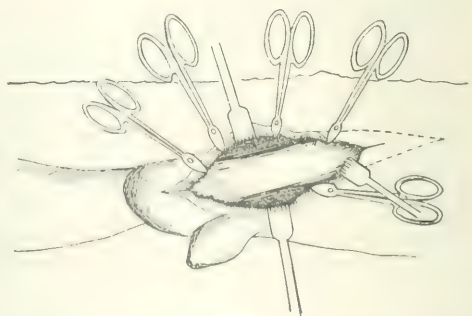


FIG. 2.

cision made. The dotted lines in Figs. 3, 4, and 5 represent the incision as I make it.

Fig. 3 shows the canal split up to the internal abdominal ring in the ordinary operation. This incision should be extended as far as the dotted line, or nearly to the anterior superior iliac spine.

Fig. 4 shows the sac raised from its bed to the internal abdominal ring. Now it can be seen that the incision, if

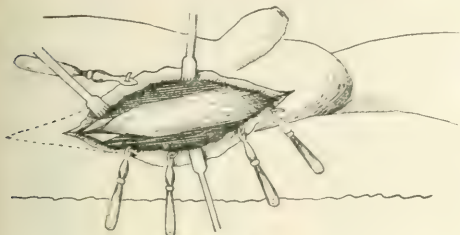


Fig. 3

it is extended as far as the dotted lines, will allow the operator plenty of room to perform his work.

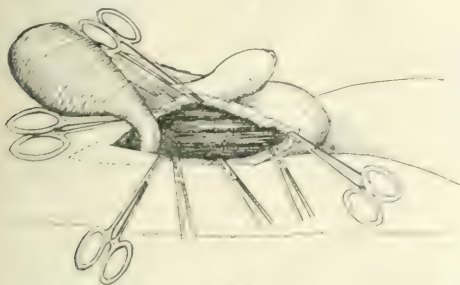


Fig. 4

Fig. 5 represents the ordinary way of ligating the sac, which I believe to be wrong, because it leaves a dimpling of the peritoneum, and is not an effective way of



Fig. 5

dealing with the sac. The following procedure should be adopted:

Fig. 6 represents two thirds of the sac cut away. The edges of it are seized with forceps and the finger is introduced in the sac close to the neck. The ligature, armed with needles, is passed through the sac around it, so a string is passed around the mouth of a purse to pucker it. Now with the forceps the sac is inserted into the abdominal cavity as represented in Fig. 7, the transversalis fascia & peritoneum. This leaves the neck of the ligature

within the sac. These ligatures, armed with the needle, are transfixed through the sac as is shown in Fig. 8, a,

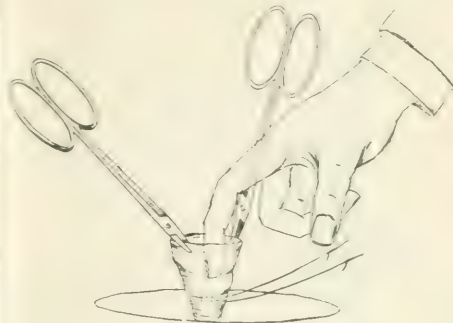
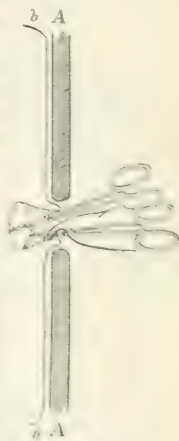


Fig. 6

which brings them externally to the neck of the sac. Now these ligatures are tightened down upon the finger and the forceps and gradually the finger withdrawn as the ligatures are tightened; this prevents the possibility of ligating the intestine. After the ligature has been tied, a stitch is taken across the stump as is seen in Fig. 9, d. This is tied firmly, and the stump will then present the appearance as represented in Fig. 10, the peritoneum being straight and the stump projecting into the peritoneal cavity. The transversalis fascia and abdominal parietes are firmly stitched over the stump. This method of dealing with the sac is applicable to the thin and moderately thickened variety.

The second manner that I have found advantageous in dealing with the sac is represented in Fig. 11.

This sac has been opened and the fat stump returned to the abdominal cavity, after which the opening is stitched up with catgut. Now a suture armed with needles is passed longitudinally around the sac, threading it in and out like a puckering string. When this ligature has been drawn tightly the sac presents the appearance as seen in Fig. 12. The sac is inserted into the peritoneal cavity as illustrated in Fig. 13. To bring the ligatures on the inside of the sac, they are drawn through the sac as in Fig. 14, a, b, and tightened and tied across the mouth of the sac as shown in Figs. 14 and 15; another suture or two may be put in across the mouth of the sac, when it will present the appearance of Fig. 17. Finally the transversalis fascia is sutured together over the sac which has been inserted into the abdominal cavity, as is shown in Fig. 18, and two or three strands of catgut are inserted into the sac for drainage purposes. This method of dealing with the sac is applicable to the thin variety and large ones, and the amount of sac placed within the



abdominal cavity a considerable mass of tissue over the part of the weakened abdomen. The manner of sewing up

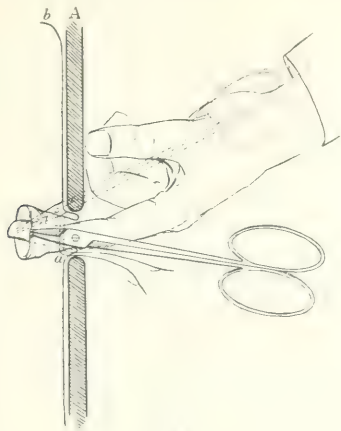
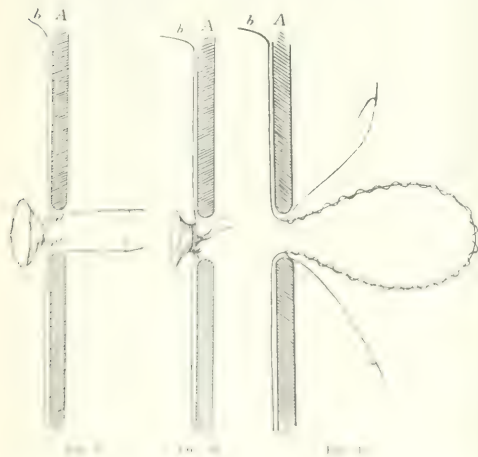


FIG. 8.

the abdominal ring, which is the hole in the transversalis fascia, will be described a little later.

The third way of dealing with the thick leathery sacs in old hernias is illustrated in Figs. 19 and 20. After the intestines have been returned to the abdominal cavity the



incision the sac is then cut off and a suture is attached to the fundus of the sac (Fig. 10). The suture in the sac is then made to follow the intestine as now carefully returned with the contents, as in the preceding case, and upon a probe the end of the ligature is carried upward into the abdominal cavity, behind the abdominal parietes as far up as the sac is large. At this point, through a small incision, the ligature is drawn out through the opening and the sac inserted into the abdominal cavity and drawn well up behind the abdominal wall. The ligature is attached to

a piece of iodoform gauze (see Fig. 20) after being drawn through the small opening. The peritoneal opening is closed with a single stitch and each one of the muscles is carefully stitched together. The second incision in the ordinary individual need not exceed an inch and a half in length on the surface of the body, and at the peritonæum

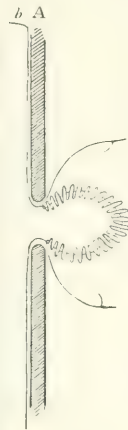


FIG. 12.

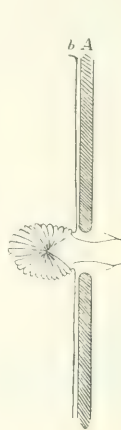


FIG. 13.

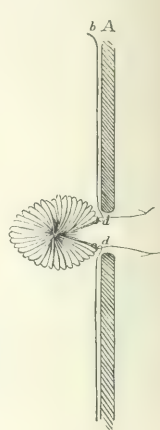


FIG. 14.

only the size of the probe. This small incision adds nothing to the hazard of the operation. Finally, a stitch is taken through the neck of the sac, as figured in Fig. 20, *b*. Catgut drainage is inserted into the sac. The sac being well scarified before its inversion into the peritoneal cavity,

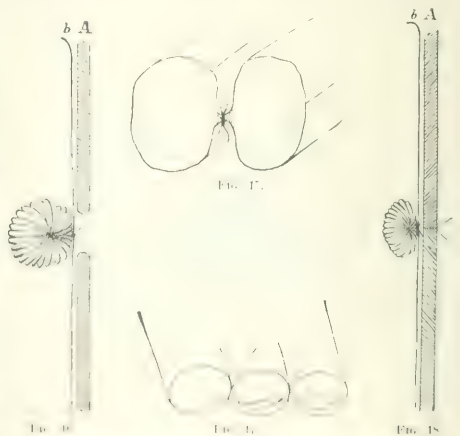


FIG. 15.



FIG. 16.



FIG. 17.

at once adheres to the peritonæum, the omentum, and the intestines, the inside of the sac being a raw surface. This forms a large mass of material directly over the weakened point of the abdominal cavity and is a very effective agent in preventing a relapse of hernia.

I have briefly given the method of dealing with these varieties of hernial sacs. In the first the sac is cut away

and the pedicle ligated in the abdominal cavity. In the second variety of moderately thickened large sac it is inverted

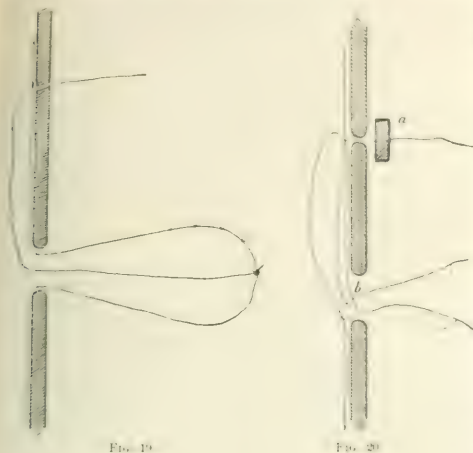


FIG. 19.

FIG. 20.

into the peritoneal cavity and puckered well down and over the internal abdominal ring. In the third method, applicable only to the thick, leathery, large variety, the sac is in-

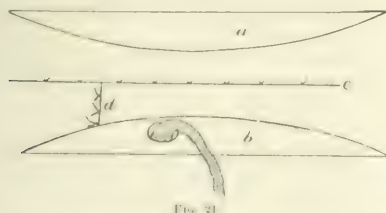


FIG. 21.

verted into the abdominal cavity and drawn well up beyond the abdominal wall for the fasciæ already given.



FIG. 22.

Now it remains to be shown that the abdominal parietes after the sac has been treated as I have suggested.

1. The internal abdominal ring must be closed over the stump or inverted with the sac into the abdominal cavity when adherent.

2. The inguinal canal must be obliterated.

3. A new band must be made for the cord.

4. In large openings, silver-wire loops should be introduced between the layers of muscles covering the inguinal canal at right angles, which will be described later.

If these steps are taken and the work is effectively done, the recurrence, even after other operations, I believe, will not occur.

1. To close the internal abdominal ring, dissect up the cord from the inguinal canal to the internal abdominal ring. Isolate the transversalis fascia from the peritonæum when not adherent to the sac and the transversalis muscle. Make two longitudinal incisions on either side of the internal abdominal ring, as seen in Fig. 21, *a*, *b*. The ring, which has been denuded, can easily be stitched together at *c*, the



FIG. 23.

cord through an incision can be transferred to the inferior longitudinal incision. Over the transversalis fascia the transversalis muscle should now be stitched, the cord being brought out directly through the muscle above the line of incision, as seen in Fig. 22. The internal oblique muscle is now carefully stitched together and the cord brought directly through that muscle, as is seen in Fig. 23. Finally, the external oblique is stitched together, and if the opening is large in the abdominal wall the cord can be brought through the external oblique, and finally the skin and cellular tissue are stitched over the cord. This forms a new canal for the cord between the external oblique and the skin, and one muscle in this arrangement overlaps the opening in the other.

Now in the large hernias with a large opening in the abdominal cavity, which variety very frequently relapsed from any operation, and in the hernias which have relapsed from other operations, with very large openings in the abdominal walls, I place wire between the layers of muscles in the following manner:



FIG. 24.

After the transversalis fascia has been stitched together over the stump, loops of silver wire are introduced at right angles to the inguinal canal, between the transversalis fascia and the transversalis muscle, as depicted in Fig. 24. The transversalis muscle is now stitched over this layer of wire, the cord brought through the muscle and another layer of silver-wire loops is placed between the transversalis muscle and the internal oblique, as illustrated in Fig. 25. This second layer of wire is placed around at right angles with the first. The internal oblique is now stitched over these wires and the other layers are stitched together, as has been already described. These wire loops are fastened at their places to prevent their slipping during the healing process, with needle sutures. They are all knotted so close to each other, as to prevent their slipping to the hernia canal to any appreciable

facilitate their encysting. All of the stitching done after the ligation of the sac is with fine wire, with the exception of perhaps the superficial sutures and the needle sutures, to hold the wire loops in place. I have seen no irritation resulting from the use of the wire as I have suggested. When it is introduced into the wound, it comes from an alcohol lamp at a red heat. My conclusions are these:

1. That relapses occurring in hernia are due to the improper way of treating the sac.

2. The use of catgut and other absorbable materials in the closing of the abdominal parietes.

3. The improper treatment of the inguinal canal.

4. The dimpling produced in the peritoneum by the ligation of the sac externally.

To remedy these causes of relapsing in hernia:

1. The sac should always be either cut off and ligated within the peritoneal cavity;

2. Puckered together and inverted into the abdominal cavity; or

3. Inverted into the abdominal cavity and drawn up well behind the abdominal wall.

4. The inguinal canal entirely obliterated by being stitched up with fine silver wire.

5. Changing the inguinal canal by bringing the cord out through the different layers of muscles at different points, thus making one layer of muscle act as a guard against the opening in the layer underneath.

6. In large openings and in relapsed hernie, the introduction of wire loops, as already described. *Strangulation of the sac when treated in this manner never occurs, because the circulation is not interfered with.* When the stump of the sac, however, is ligated in the peritoneal cavity, it unites with the adjacent tissue precisely as the stump does following an ovariectomy.

I have seen no unpleasant results in five cases treated as described either from the sac or wire.

I desire to present the following case for your examination:

City Hospital, B. L. Fourth Record.—M. J., aged twenty-seven years, single, sailor; admitted December 31, 1893; discharged March 5, 1894; visiting physician, Dr. Phelps; house physician, Dr. Green.

The patient was, fifteen years ago, hit full from the mast of a ship, and since that time had no trouble. The next day after the fall he noticed a small tumor at the right inguinal region, about the size of a marble. This tumor gradually enlarged, and during the next three or four years it increased in size. The patient noticed no trouble, and he did not consult the doctor until the tumor had become so large that it caused him considerable discomfort and pain.

He consulted a doctor, who found it to be an enlarged inguinal lymphatic gland, and he was operated on in the following way: The tumor was removed by the method of Dr. Phelps.

The patient was then placed in bed, and he was kept in bed five weeks, free action of the kidneys being induced by small doses of iodide and acetate of potassium largely diluted. The vitreous slowly cleared up and the detachment gradually sank downward until it involved the lower third of the retina. The vision improved to 20/40, with D. 4 and remained at this point until the death of the patient, seven months later, and there was no further extension of the detachment.

The patient was then placed in bed, and he was kept in bed five weeks, free action of the kidneys being induced by small doses of iodide and acetate of potassium largely diluted. The vitreous slowly cleared up and the detachment gradually sank downward until it involved the lower third of the retina. The vision improved to 20/40, with D. 4 and remained at this point until the death of the patient, seven months later, and there was no further extension of the detachment.

The patient was then placed in bed, and he was kept in bed five weeks, free action of the kidneys being induced by small doses of iodide and acetate of potassium largely diluted. The vitreous slowly cleared up and the detachment gradually sank downward until it involved the lower third of the retina. The vision improved to 20/40, with D. 4 and remained at this point until the death of the patient, seven months later, and there was no further extension of the detachment.

RECENT EXPERIENCES IN THE TREATMENT OF DETACHED RETINA,

WITH A DETAILED REPORT OF THIRTY-EIGHT CASES.

By CHARLES STEDMAN BULL, M. D.,

NEW YORK.

(Concluded from page 272.)

CASE XIV.—Miss W., aged twenty-seven years. First seen February 6, 1887. Always very myopic, but has only worn glasses (sph. — D. 4-50) for two years. Three weeks ago she received a severe blow on the left eye, which caused temporary loss of sight, then erythropsia, and subsequent loss of vision. An examination showed:

R. E. = $\frac{2}{3}$; with sph. — D. 9 = $\frac{1}{8}$. Media clear. Not very marked degeneration of the chorioid.

L. E. = $\frac{2}{3}$, unimproved. Lens clear. Vitreous generally hazy. Retina detached at extreme periphery in nasal and inferior quadrants. T.—1. No rupture of the retina visible.

Owing to the unusually healthy condition of the chorioid, in spite of the high degree of myopia, I decided to operate at once. A subconjunctival puncture of the sclera was made in the infero-nasal quadrant, a few drops of clear fluid exuded, and the detached retina collapsed. Rest in bed, atropine, and a bandage were then kept up persistently for five weeks. Pilocarpine was very badly borne by the patient and could not be employed. At the end of five weeks the vitreous became perfectly clear, the retina was in place, and the vision with sph. — D. 7 had risen to $\frac{1}{8}$. By total abstinence from use of her eyes and careful management of her general health, which had suffered from confinement in bed, this favorable condition was maintained for nearly eight months. The detachment then suddenly returned without any warning and involved the entire lower half of the retina. The vitreous became rapidly cloudy and vision eventually sank to perception of light, and the lens became entirely opaque.

CASE XV.—Miss E., aged seventy-four years. First seen November 16, 1887. Always very myopic and has used her eyes constantly all her life. Three days ago she struck her nose and orbital margin of the left side a violent blow against a chair, and in a few minutes noticed that she could see nothing but light with the left eye.

R. E. = $\frac{2}{3}$; with sph. — D. 6 cyl. — D. 1 axis 90° = $\frac{1}{8}$. Lens clear, vitreous clear. Extensive degeneration of the chorioid, especially around the disc.

L. E. = perception of light. Vitreous filled with blood in process of absorption, with floating clots. Peripheral opacities in the lens. Three weeks later the retina was found detached in the supero-temporal quadrant. As the blood became absorbed and the vitreous slowly cleared up, the chorioid was found to be extensively degenerated, and a laceration of the retina was discovered upward and inward, near the region of the ora serrata. T.—1.

Owing to the advanced age of the patient and the extreme degree of chorioidal degeneration, very little hope was felt of a favorable issue. The patient was placed in bed, atropine was instilled, a bandage was applied, and small doses of pilocarpine were injected. The latter soon produced unpleasant symptoms of cardiac failure and was discontinued. The patient was kept in bed five weeks, free action of the kidneys being induced by small doses of iodide and acetate of potassium largely diluted. The vitreous slowly cleared up and the detachment gradually sank downward until it involved the lower third of the retina. The vision improved to 20/40, with D. 4 and remained at this point until the death of the patient, seven months later, and there was no further extension of the detachment.

CASE XVI.—Mrs. C. K., aged sixty-four years. First seen June 16, 1888. Always hypermetropic and has worn glasses for all purposes for many years. About ten years ago suddenly noticed a cloud before the left eye while reading, and this slowly increased in extent, so that for about three years she had not been able to see with the eye. Was told that she had a detachment of the retina. Then the vision slowly improved and for several years she has had very useful vision with the left eye. Two weeks ago the same condition suddenly returned, and she can now only distinguish the movements of the hand.

R. E. = $\frac{1}{4}$; with sph. + D. 3.50 = $\frac{1}{2}$. Media clear. Fundus normal.

L. E. = movements of the hand. Nuclear and peripheral opacities in the lens. Vitreous hazy. Retina detached below and on both sides of the disc. T. + 1.

The usual treatment of rest on her back in bed, with atropine and a bandage, was resorted to, together with daily injections of pilocarpine, and this was persisted in for three weeks without any improvement. The vitreous became generally hazy and there was no increase in the visual acuity. It was then decided to puncture the sclera, which was done with a narrow knife downward and outward subconjunctivally. Some turbid fluid escaped and the detachment partially collapsed. The local treatment was continued for two weeks longer, but the retinal sac again filled up, the haziness of the vitreous increased, and the lens grew more opaque. The vision slowly sank to faint perception of light, with absolutely no correct projection, and the cataract became complete. The other eye remained intact, and there was not a sign of degeneration of the choroid ever observed.

CASE XVII.—Mrs. C. S. E., aged thirty-seven years. First seen July 28, 1888. Always very myopic, especially in left eye. For three years the left eye has not been of much use, and she has had a constant dull ache in both eyes.

R. E. = $\frac{1}{8}$; with sph. - D. 10 = $\frac{1}{2}$. Hazy vitreous with floating opacities. Extensive choroidal degeneration.

L. E. = movements of the hand. Extensive opacities of the vitreous. Detachment of the retina downward and outward. T. - 1.

The usual treatment was at once instituted. Rest in bed, atropine, a bandage, and pilocarpine by daily hypodermic injection were maintained for four weeks, with some improvement. The vitreous became much clearer. All the floating opacities were absorbed but there remained a broad, dense membrane stretching entirely across the fundus. The vision rose to $\frac{1}{4}$ with sph. - D. 8, but there was no change in the detachment, and at the end of a month the patient was allowed to rise from the bed and move about. The state of the fundus and the vision remained unchanged for about two years, and then the vision rather rapidly failed, and within a month the retina became totally detached. The lens remained clear for two years longer and then became cloudy opaque. The other eye remained as it was at the time of the first examination. This patient declined all operative treatment.

CASE XVIII.—Mrs. M. aged fifty-seven years. First seen October 6, 1889. Always very myopic, and for many years the left eye has been useless. Some years ago had a sudden loss of vision in the right eye from hemorrhage into the vitreous and retina from which she entirely recovered. About a month ago the vision in the right eye again began to fail, and there was a constant dull ache in this eye.

R. E. = $\frac{1}{4}$; with sph. - D. 18 = $\frac{1}{2}$. Lens clear. Fundus and floating membrane in vitreous. Small detachment of the retina downward and outward. T. - 1.

L. E. = fingers at six inches and with sph. - D. 18 = $\frac{1}{2}$.

Lens clear. Very cloudy vitreous. Detachment of the retina outward, downward, and inward. T. - 1.

Owing to the extreme myopia and extensive choroidal degeneration, no operation was deemed permissible. The patient was placed in bed, atropine was instilled and a bandage applied, and she was cupped on the right temple. The vitreous slowly cleared up, but the detachment of the retina gradually extended until it involved the entire lower half of the retina. At the end of four weeks the patient became very much prostrated from the confinement in bed and the effects of the pilocarpine, and she was allowed to rise and a course of tonic and restorative treatment was begun. She soon improved very much in general health, but the eye remained in about the same condition, and there was no change in the media or fundus for three years, since which time I have not seen the patient.

CASE XIX.—Mr. C. E., aged twenty-seven years. First seen April 23, 1889. In August, 1888, first noticed that the vision of the right eye was misty, previous to which both eyes had always been perfect, and this grew slowly worse until December, when it again began to improve, and eventually became entirely clear. Has used his eyes very constantly in microscopy. Two days ago the same thing again occurred.

R. E. = $\frac{1}{4}$, unimproved. Lens clear. Vitreous hazy. Retina detached in radiating folds in infero-temporal quadrant, reaching from disc to periphery.

L. E. = $\frac{1}{4}$. Myopic astigmatism - D. 0.50, axis 90°.

This patient was at once put to bed and the usual local and internal treatment begun and persisted in for five weeks with very satisfactory results. There was no myopia, and but very little choroidal degeneration. By the end of the third week the vitreous had become entirely clear and the radiating folds of detachment had coalesced into one narrow, pouch-like cyst, directly downward in the equatorial region. At the end of the fifth week the retina was entirely in place and vision had risen to $\frac{1}{2}$. He was then permitted to rise and go about, atropine and dark glasses being constantly used. At the end of the second month he was permitted to use his eyes moderately. For two years the eye remained sound and useful, with vision $\frac{1}{2}$, since which time I have not seen him.

CASE XX.—Mr. T. B., aged twenty-eight years. First seen September 23, 1889. This is one of the cases reported to the society in 1891 as treated by Schöler's method. No improvement in vision, but reduction in the extent of the detachment.

CASE XXI.—Mrs. M., aged forty-seven years. First seen October 6, 1889. Failing vision in right eye for two months. Three weeks ago the vision of this eye became suddenly very much obscured.

R. E. = $\frac{1}{8}$ eccentrically, unimproved. Lens clear. Vitreous generally hazy and contains floating opacities. Detachment of entire upper half of retina. T. + 1.

L. E. = $\frac{1}{4}$; with sph. + D. 7 = $\frac{1}{2}$. Media clear and fundus normal. No detachment of the retina.

Treatment by rest in bed, atropine and pilocarpine by daily hypodermic injection, and daily instillation of pilocarpine was chiefly of service in this case, but through a period of four weeks, gradually the marked improvement in vision. The general haziness of the vitreous entirely disappeared, the floating opacities were gradually absorbed, the membrane grew thinner and well defined (it is supposed the infero-temporal quadrant) and vision rose to $\frac{1}{4}$. The result was that she was able to go out and pursue about the house and do a good deal of general housework. The pilocarpine was discontinued and the bandage was left off, but the atropine and bandage treatment were continued. The detachment grew smaller, and the vision eventually rose to $\frac{1}{2}$, but never exceeded this, and the detachment never entirely

disappeared. The condition remained unchanged for more than a year, since which time I have not seen the patient.

CASE XXII.—Mr. M. W. P., aged fifty-eight years, journalist. First seen February 4, 1890. Has always had extremely good eyes until three days ago, when he noticed a sudden obscuration of the vision of the left eye while writing, and found that he could see nothing above the horizontal plane.

R. E. = $\frac{1}{3}$ —. Media clear, fundus normal.

L. E. = $\frac{1}{3}$ —, below the horizontal plane, unimproved. Media clear. Detachment of the retina in inferior quadrant, involving nearly two quadrants of the periphery. There was no apparent cause for the occurrence of the lesion, except long-continued overwork, especially at night. As the refraction was emmetropic, the patient had proper presbyopic glasses, and there was no chorioidal degeneration nor any history of traumatism. Rest in bed, with atropine and a bandage locally, persisted in for six weeks, eventually brought about a disappearance of the detachment and a restoration of the vision to the normal standard. How long this satisfactory condition lasted I am unable to say, as four months later the patient went to Europe, and I have never heard of him since. No pilocarpine or any other diaphoretic or diuretic was employed in the treatment of this case.

CASE XXIII.—Mr. C. H. B., aged fifty-nine years, builder. First seen March 30, 1890.

Had always had excellent vision in both eyes till March 14th, when he noticed a number of large black spots before the right eye. On March 26th the right eye became suddenly entirely blind. Since then the vision on the temporal side of the field has been partially restored, but he can see nothing to the left of the median line. The day before the black spots appeared he had been exposed for several hours to a furious storm of snow and wind, through which he had been obliged to walk for several miles, and was completely exhausted by it. R. E. $\frac{2}{3}$ eccentrically. Lens clear. Vitreous hazy. Detachment of the retina downward, outward, and inward over about two thirds of the fundus. L. E. $\frac{3}{4}$ +, unimproved. Lens clear. Vitreous generally hazy, with small floating opacities. General chorioidal degeneration.

The patient was put to bed, atropine was instilled in both eyes, and a bandage applied to the right eye. Owing to the existing chorioiditis, he was given hydrarg. chlor. corrosive, gr. $\frac{1}{16}$, three times a day, and pilocarpine was injected hypodermically once a day. The latter was discontinued on the sixth day, as it induced nausea and vomiting, but the other treatment was kept up persistently for five weeks. The chorioiditis gradually subsided, the vitreous of both eyes cleared up, and the floating opacities disappeared. The detachment of the retina in the right eye became much reduced in extent, and the vision of the right eye improved to $\frac{1}{2}$ +, and of the left eye to $\frac{1}{4}$ +. At the end of the fifth week the bandage was removed from the right eye, but he was kept in bed for another week. As time went on the vision in the left eye continued to improve, and completely cleared up. The fundus normal, but the right eye remained in the same condition, as being in the peripheral region, and only slightly improved in vision.

CASE XXIV.—Mr. M. M., aged thirty-two years. First seen March 10, 1890. This is one of the cases reported to the Society as treated by the method of Schaller, and published in its *Transactions* for that year. Detachment of the retina in the right eye, involving the periphery, and extending to the center.

CASE XXV.—Mr. B. A., aged fifty years. First seen May 10, 1890. This is one of the cases reported to the Society in 1890, as treated by the method of Schaller, and published in its *Transactions* for that year. Detachment of the retina in the right eye, involving the periphery, and extending to the center.

seen June 19, 1890. Always very myopic. Is a civil engineer. Four years ago he lost the sight of his right eye from detachment of the retina, and it has been useless ever since. Five days ago, while completing some surveying work in the field, he noticed a sudden obscuration of the sight of the left eye. He stopped his work at once, and as soon as possible came to see me. R. E. = perception of light; complete posterior synechia. Lens opaque. T + 1. L. E. = $\frac{2}{3}$ +, with sph. — D. 7 = $\frac{1}{3}$ —. Lens clear. Floating opacities and general haziness of the vitreous. Detachment of the retina in the supero-temporal quadrant.

The age of the patient and the condition of the right eye made the case a desperate one. He was at once put to bed, atropine instilled in both eyes, and a bandage applied to the left eye. Pilocarpine was contraindicated on account of advanced cardiac disease, and in its place small doses of potassium iodide, largely diluted, and mercuric bichloride were administered, accompanied by a general tonic treatment. Under this treatment the vitreous gradually cleared up and the opacities were largely absorbed, but there was no improvement in the detachment of the retina, and the resulting vision, after seven weeks' treatment, was not improved. The ophthalmoscope showed extensive disease of the chorioid with a myopia of D. 8. The vision of the left eye and the condition of the fundus have not materially changed since, during a period of four years.

CASE XXVII.—Mr. T. E. B., aged twenty-eight years. First seen September 23, 1890. Three years ago, while ill, he read for a long time lying on his back, for many days in succession, and since then he has suffered constantly from various asthenopic symptoms. In March, 1890, he received a blow on the right eye from a boxing glove, which temporarily produced nearly complete blindness. In April he was examined by an oculist, who discovered a detachment of the retina in the right eye. Since then there has been a slight improvement in the vision. R. E. = $\frac{1}{3}$ eccentrically. Lens clear. Vitreous generally hazy, with a fixed membranous opacity. Retina detached downward and outward. L. E. = $\frac{1}{3}$ +. Refraction normal.

As the cause of the detachment of the retina was a traumatism, with resulting chorioiditis in an eye previously entirely normal, I decided to operate. Under cocaine, a subconjunctival incision was made through the sclera in the infero-temporal quadrant, just back of the ciliary region, with a very narrow knife. The knife was plunged through the detached retina into the vitreous and a complete division of the vitreous membrane was made. After the incision was completed the conjunctival wound was closed by a single suture, atropine was instilled, and a bandage applied. On the next day the vitreous was very hazy, but the detachment had entirely disappeared. On the second day all reaction had vanished, and pilocarpine was injected hypodermically every day for fifteen days. The latter was then discontinued and small doses of hydrarg. chlor. corrosiv. were administered thrice daily. At the end of the sixth week the vitreous had become almost entirely clear, and at the extreme periphery downward there was still a small detachment less than half the size of that which existed previous to the operation. There was rather extensive degeneration of the chorioid, but the vision had risen to $\frac{1}{3}$ +. This eye still remains in the same condition after a lapse of three years and a half.

CASE XXVIII.—Mr. M. H., aged seventy-three years. First seen September 19, 1890. This is one of the cases reported to the Society in 1890 as treated by Schaller's method, and published in its *Transactions* for that year. Decided temporary improvement, followed two months later by almost total loss of sight (perception of light) from a return and further extension of the detachment.

CASE XXIX.—Mr. B. W., aged thirty-six years. First seen December 28, 1890. This is one of the cases reported to the society in 1891 as treated by Schöler's method, and published in its *Transactions* for that year. Immediate impairment of the existing vision resulted, followed by a very slow improvement, which, however, never reached the degree that existed previous to the operation.

CASE XXX.—Miss A. E. M., aged fifty-three. First seen February 7, 1891. Has always been very myopic, but her eyes have never given her any trouble. In May, 1890, she first noticed an irregular scotoma in the field of the left eye, and since then the vision has slowly failed. R. E. = $\frac{2}{3}$ 3; with sph. — D. 10 \odot cyl. — D. 1.50 axis $180^\circ = \frac{1}{4}$ 8. Lens clear. Floating opacities in the vitreous. Extensive degeneration of the choroid all over the fundus. L. E. = movements of the hand. Lens clear. Membranous opacities in the vitreous. Very extensive detachment of the retina downward, outward, and inward.

Owing to the very extensive choroidal degeneration in both eyes, and the very large detachment of the retina in the left eye, any operation was deemed unadvisable. The patient was put to bed, atropine was instilled in both eyes, a bandage was applied to the left eye, and a strong tonic treatment was administered for a week. Then pilocarpine was administered hypodermically every day for sixteen days. Its physiological effect was very marked, and eventually caused extreme prostration, in spite of the tonic treatment, and its administration was stopped. At the end of five weeks there was no improvement in the vision or in the detachment of the retina, though the vitreous had become very much clearer in both eyes. Six months later opacities appeared in the lens, which increased so rapidly that within three months the lens had become entirely opaque. The other eye still remains in the same condition.

CASE XXXI.—Mr. W. O., aged thirty-five years. First seen March 23, 1891. When a boy he had a great deal of trouble with his eyes, and was for a long time forced to give up his education, because his vision was so defective. He was for a long time under constitutional treatment of some sort, and regained sufficient vision to prosecute his studies. Several months ago he began to be troubled with foggy vision in the left eye, and there was a constant dull ache in the eye whenever reading or writing. He consulted an oculist, who told him that there was a detachment of the retina in the left eye, and that he had had a chorio-retinitis in both eyes. When I examined him he found:

L. E. = $\frac{1}{10}$ compressed. Refractive hypermetropia and astigmatic. Lens clear. Membranous opacity in the vitreous. Detachment of the retina downward and outward. Extensive old chorio-retinitis.

R. E. as per title spec. & D. 175 = old. & D. 175 acc. 1847 = 1%. Media clear. Extensive chorio-retinitis (old).

The condition of the trachea of both cases (supraglottic stenosis) favoured prognosis almost exclusively. It was good for both, and the long treatment of atrophic rhinitis, and pharyngitis, undoubtedly helped. The lower distal trachea was extremely narrow and granulated, but after the SARS disease was terminated, some degree of granulation healed, largely effaced, some persisted in the places, which granulated very from chronic and fibrous tissue, and I had thought the stenosis in. The patient was kept on her feet in her five old months. At the end of May from the different case, much mucus and few crusts and improved by 24 with a moderate recovery, and there was no immediate change in the treatment of the trachea. Since the summer of 1895 there has been a well but steady fallow of mucus in the case but the stenosis has improved. At about 9th month since. Presence of the acute and chronic nature, and degree of the tracheitis, as well as the tracheitis, and extent of the mucus.

and produced not the slightest effect on the vision or the detachment.

CASE XXXII.—Mr. J. C. O., aged fifty years. First seen July 14, 1891. One year ago, after severe mental strain, he woke one morning with a large black spot before the left eye. He consulted an oculist, who told him he had a serious retinal hæmorrhage. The blood was gradually absorbed and vision slowly improved. Subsequently he had another larger hæmorrhage in the same eye, which obscured nearly the entire sight, and since then he has only been able to see with the temporal half of the field of vision. He is astigmatic and has worn correcting glasses.

R. E. = 11 - , with spl. = D. 0.50 \subset cyl. = D. 1 axis 180° = 18. Media clear. Fundus normal.

L. E. = fingers eccentrically on the temporal side. Lens clear. Large membrane, containing blood-vessels, in the vitreous, attached to the temporal margin of the disc behind and to the ora serrata in front. Extensive disorganization of the retina and chorioid, with a small detachment downward and outward.

The extensive disorganization of the retina and choroid in the left eye, and especially the presence of blood-vessels in the membrane stretching across the vitreous, positively contraindicated any attempt to divide this membrane, as it would have caused extensive hemorrhage into the vitreous. The generally enfeebled condition of the patient forbade the employment of pilocarpine.

The patient was put to bed, atropine was instilled, and a bandage applied to the left eye. Strong tonic treatment was administered, and after the first two weeks small doses of mercuric bichloride were prescribed. The eye gradually became quiet, the vitreous grew somewhat less hazy, and at the end of four weeks the patient was permitted to leave his bed and the bandage was removed from the left eye. The vitreous membrane remained unchanged, and the detachment showed no increase for nearly two months. Vision had improved to $\frac{20}{80}$, and all treatment was stopped. Fourteen weeks after I first saw him the eye became suddenly blind, and an examination showed that the retina had become totally detached.

CASE XXXIII.—Mrs. M. McB., aged forty-seven years. First seen November 16, 1891. In June last she received a violent blow on the head by falling from a landau in a runaway accident, and was unconscious for two days, and ever since there has been a marked loss of vision in the left eye. She has always been very myopic, but has never worn glasses with any regularity.

13 +. Media clear. Extensive degeneration of the chorioid,

L. E. = $\frac{7}{2} \frac{A}{0.5}$, unimproved. Lens clear. Vitreous very hazy. Detachment of the retina downward.

The patient stated that the vision of the left eye varied from time to time, and that it was always worse than the vision of the right eye. She said at times that she had seen double outlines of a landscape placed one to the left and one to the right. The patient had no symptoms systematically worse at night. For two weeks, without consulting her physician, she had given up the vision in the Amblyopie. At some time, however, and the eyes were amblyopically without reason back in the *inter-oculomotor* position. A few days later, she had started under the *inter-oculomotor* and the *sub-oculomotor* position. The *inter-oculomotor* and *sub-oculomotor* were continued and in the course of time were over the *inter-oculomotor* position. The patient said: "The vision was not so good, with only one eye, and I was not so good as the vision of the right eye. I had a headache, but there was no headache in the morning, and the *inter-oculomotor* position in it was better. The vision of the right eye."

CASE XXXIV.—Mr. J. H. K., aged nineteen years. First seen January 2, 1892.

In November, 1890, during a game of football, the right eye was injured by a blow. The vision was entirely lost for a few hours, but he persisted in finishing the game. After a few hours of rest the sight began slowly to improve. Until about Christmas, 1890, he could see quite well. The eye remained quiet and useful till April, 1891, when the vision again suddenly failed and has never returned. Since then there have been occasional attacks of pain and congestion in the eye.

R. E. = fingers at three feet. Iris dilated and immovable. Lens clear. Fixed and floating opacities in the vitreous. Retina detached downward, outward, and inward. T. — 1.

L. E. = $\frac{1}{2}$. Emmetropia.

Treatment by confinement in bed, atropine, a bandage, and pilocarpine daily, hypodermically, for four weeks produced no improvement in the vision and no subsidence in the detachment, though the vitreous became very much clearer. The general haziness of the vitreous disappeared, and most of the floating opacities were absorbed. I then punctured the sclera beneath the conjunctiva in the infero-temporal quadrant with a narrow knife without the slightest result. No fluid exuded beneath the conjunctiva, and there was no collapse of the detached retina. The knife was again introduced and the loosened retina freely divided. This produced some collapse of the retina, but no improvement in the vision. There was little or no reaction following, but after two weeks' further confinement in bed with a bandage there was no perceptible change, and all treatment was abandoned. This patient was seen during the past winter, and the retina had become entirely detached and the lens entirely opaque. The eye at times was irritable, with well-marked ciliary injection, and in the latter part of May, 1894, there appeared an obstinate conjunctivitis of the left eye with rather intense photophobia, accompanied by constant pain in the right eye, which rendered enucleation of the blind eye advisable.

CASE XXXV.—Miss L. A., aged thirty-two years. First seen January 16, 1893.

Always very myopic. Five years before, following a long-continued strain of the eyes in literary work, a detachment of the retina occurred in the right eye. This was treated by another surgeon by confinement in bed, atropine, and a bandage, and hypodermic injections of pilocarpine for nearly five weeks, and resulted in an apparent cure, as the vision returned and the defect in the visual field was restored. All use of the eyes was interdicted for a year, and she spent two years in travel abroad. The right eye remained fairly well until a few weeks before I saw her, when it suddenly grew worse, and the loss of vision was accompanied by a dull ache.

R. E. = fingers at one foot eccentrically. Lens slightly cloudy at the periphery. Thin membranous opacity in the vitreous. Ciliary injection. Iritis with adhesions. Retina detached downward, outward, and inward. T. — 1.

L. E. = $\frac{1}{2}$ with sph. — D. 8. cyl. = D. 1.50, axis 180° = 1.50. Emmetropia with hypermetropia.

The patient had not been in bed, atropine was instilled four times a day. The eye was washed with hot water four times a day, and in the interval a bandage was applied. She was also given pilocarpine in a strength of a grain three times daily. The ciliary injection subsided, and it was not until the end of the week that the vision began to improve. There were constantly of brown, somewhat reddish brown, and in some cases yellowish brown, spots, and the vision to improve. The patient then began to get up, and the vision to improve. The atropine, bandage, and hypodermic were continued for nearly a month longer, by which time the vision had risen to $\frac{1}{2}$, and which it did not so. Owing to the extreme degree of choroidal degeneration and the extent of the detach-

ment, any operative interference was deemed ill-advised. The eye remains in about the same condition at the present writing.

CASE XXXVI.—Miss T. O., aged forty-five years. First seen May 16, 1892.

Four days previously, on awakening in the morning she found that the right eye was totally blind. She had for many years strained her eyes by long hours of night work. An examination showed the following conditions:

R. E. = fingers eccentrically at six inches. Lens clear. Several small floating clots in the vitreous. Very extensive retinal hemorrhages. One very large one below the disc, stretching all across the fundus. Several small ones on the disc and along the vessels. On May 20th several small fresh hemorrhages were found, with patches of yellowish exudation below the disc. Small detachment of the retina at extreme periphery of the fundus downward. Signs of periarteritis and periphlebitis. Urine of a high specific gravity, but contains neither albumin, sugar, nor casts. Large amount of urates and uric-acid crystals. On May 27th there were several small fresh hemorrhages noticed, and the large hemorrhage showed signs of absorption by breaking up into small patches.

The left eye was normal, but presbyopic.

This patient was treated from the beginning in the usual way. She was placed in bed, atropine and cocaine were instilled, and a bandage was applied. She was given small doses of potassium iodide and sodium bicarbonate largely diluted, tonics, and a liberal diet. The repeated hemorrhages occurred while under this treatment, and for a period of five weeks there was no improvement in the vision and no change in the fundus. She was then permitted to rise and move about. On July 14th she had a violent epistaxis, which was so continuous and profuse that it necessitated plugging of both nostrils. The next day she claimed that she could see much better, and I found that she could count fingers at three feet all over the field. There was, however, no change in the fundus, and the vision soon sank to the former standard. In October she had a similar attack of epistaxis, with another improvement of the vision which lasted for several days and then disappeared. On January 27, 1894, the retina became suddenly totally detached, and one week later occurred a cerebral apoplexy, from which she did not recover.

CASE XXXVII.—Mrs. W. H. M., aged fifty-nine years. First seen January 20, 1894. Very myopic, but eyes have been very strong. Just before Christmas had a bad attack of "la grippe," with marked blurring of the sight in the left eye. This soon passed off; but one week ago the vision of the left eye became again entirely obscured, and has improved but little since.

R. E. = $\frac{1}{2}$ with sph. — D. 1. cyl. = D. 1. axis 180° = $\frac{1}{2}$. Media clear. Usual signs of a myopic fundus.

L. E. = $\frac{1}{2}$, unimproved. Large central hemorrhage in the vitreous. Peripheral opacities in the lens.

The patient was put to bed, atropine was instilled, and a bandage was applied constantly. There was a steady but slow improvement up to March 5th, when the vision in the left eye had risen to $\frac{1}{2}$ with sph. — D. 4, and she could read Jaeger No. 2 at eight inches. On March 10th, while sitting quietly in a chair, the vision of the left eye again became suddenly obscured, and an examination a few hours later showed a detachment of the retina upward and outward over about one third of the fundus. V. = $\frac{1}{2}$. The patient was immediately put to bed, the bandage re-applied, the bowels were freely opened, and pilocarpine administered hypodermically, which produced the usual physiological effect to no alarming degree. The nausea was so intense that I feared to repeat the dose. After three days had passed, I ventured to give the pilocarpine in

tablets by the mouth, and in this way the drug was borne very well and produced profuse diaphoresis. This treatment was continued for four weeks and was then stopped. The atropine was continued, but the bandage was discarded. The vitreous became entirely clear, and the detachment had shifted its position to downward and outward. The vision slowly improved, the detachment grew gradually smaller, until on May 18th it had entirely disappeared. Vision was then $\frac{4}{5}$ —with sph. — D. 4 and she could read Jaeger No. 4 fluently.

CASE XXXVIII.—Mr. E. V. H., aged fifty-three years, first seen February 6, 1894. Fourteen years ago he suddenly lost the vision of the right eye from extensive intra-ocular hemorrhage, from which the recovery was very slow. Several times since then there has been a recurrence of the hemorrhages, but always slight in degree. On three occasions there have been mild attacks of iritis in this eye, which subsided under appropriate treatment. The vision has been quite defective in this eye until ten days before I saw him, when it suddenly became very much worse, and he enquired another hemorrhage had occurred. An examination showed as follows:

R. E. = fingers at one foot eccentrically. Discolored iris, with an oval pupil, long diameter vertical. Posterior synechia. Lens slightly cloudy at periphery. Vitreous slightly hazy. Detachment of the retina downward and outward.

L. E. = $\frac{4}{5}$, unimproved. Media clear. Fundus normal.

Six weeks' constant treatment by atropine, bandage, and minute doses of potassium iodide and mercuric bichloride caused a cure of the iritis, absorption of the posterior synechia, a clearing up of the cloudy vitreous, and some slight improvement in the vision, but the detachment of the retina remained unchanged. The repeated hemorrhages which had occurred had probably caused such disorganization of the retina and choroid that no useful improvement of the vision could ever be expected. This patient was seen as recently as May 16th, and the condition of the fundus and vision remained unchanged.

CHOLERA INFANTUM

(ENTERITE CHOLERIFORME.)

By H. ILLOWAY, M.D.

PROFESSOR OF DISEASES OF CHILDREN,
CHICAGO COLLEGE OF MEDICINE AND SURGERY,
FORMERLY ATTENDING PHYSICIAN TO THE JEWISH HOSPITAL, CHICAGO, ILL.

It is today a well-established fact that the term *cholera infantum*, as generally employed since the days of the earliest American writers, embraces a number of morbid entities, differing in their symptomatology, in their pathology, but having this in common, that they all occur at one and the same season of the year—viz., in the hot months. Among these various morbid entities is one that really deserves the name *cholera infantum* from the striking resemblance at its most characteristic feature to that of adult cholera.

True cholera infantum is an exceedingly rare disease. Holt* holds that its frequency is not greater than two or three per cent. of all cases of summer diarrhoea. Starr† gives about the same figures. My own experience (I exclude all cases of summer diarrhoea that do not correspond to the type here described) does not show over a half per cent.

The disease occurs only in the hot months—July and August; in the more southern latitudes also in September. However, besides the heat of the season, an additional condition seems requisite—namely, great humidity of the atmosphere. In my first case, which was of but short duration, I, at the time, noted this great humidity of the atmosphere, the sultriness of the weather, that rendered respiration difficult, made one feel as if he were in a steam bath, and wilted the stiffest collar, saturating it with perspiration as if it had been dipped in water.* This was true of the atmospheric conditions with all the subsequent cases. This observation made by me in 1878 fully corroborates what Dr. Starr has said upon this point.†

It is most usually seen in infants between the ages of six and fifteen months—the first half of the period of dentition. It is very questionable whether cholera infantum has ever been seen in infants younger than four months.

SYMPTOMATOLOGY.—*Diarrhoea*.—An infant has been having loose, diarrhoeal stools—not more than two to three, at most four to five a day—for some days. Usually these stools have a green color, the chopped-spinach stool of Trousseau. Suddenly, without any forewarning, the stools are greatly multiplied in number and markedly changed in character; the dejections are now simply a serous fluid, colorless, or of a light yellow or yellowish-green tinge, containing no fecal matter, which soak away into diaper or bed-clothing and only leave a stain like that of light-colored urine. This watery discharge runs from the child in a heavy stream, *pleno rivo*, like when a hydrant faucet is turned wide open. It has a neutral or an alkaline reaction and a peculiar *musty* odor. Examined microscopically, we find epithelial cells in abundance and great numbers of bacteria. Sometimes the preceding diarrhoea, the chopped-spinach stools described above, is increased in severity at first; the stools are increased in frequency, become thin and watery in character, contain greenish and yellowish flocculi and fecal matter. This exacerbation of an ordinary diarrhoea and of but short duration; the dejections become quickly choleraic.

Very rarely does the disease supervene in a child whose bowels are, up to the moment of attack, in apparently normal condition.

Pain.—The choleraic stools are absolutely painless. I have not, in the cases under my observation, noted the least indication of suffering on the part of the child. Other observers (indeed, as mentioned in this, three others) therefore, evidently confirms my own experience; for certainly had pain been present, it would not have caused their keen and watchful eyes.

Emesis.—Concomitant with or shortly preceding the choleraic change in the stools vomiting sometimes occurs. The child vomits everything that it has previously eaten and nothing, no matter what is retained upon the stomach.

* This may appear trifling, but on I have on a frequent occasion used a wet towel dipped in water to saturate the collar of a child suffering from cholera infantum. There is no doubt as to the effectiveness of this treatment and on this condition from the fact that the perspiration immediately dried and a fine blue stain as if it had been dipped in water.

† Loc. cit.

* Keeney, *Hygiene of Infancy*, 2d edition, vol. ii.
† *Medical Record*, *Treatment of the Diseases of Children*, Under diarrhea.

The position here taken is still further corroborated by the fact that when milk intoxication does occur, and it is of very rare occurrence, it presents characteristics very much different from those of cholera infantum:

MILK INTOXICATION.

Comes on suddenly without the child having apparently been previously ill.

The stools are fecal and have a strong fecal odor.

The stools, at least the earlier ones, contain more or less flocculi of casein, natural color or stained by biliary matter, and agglomerations of globules of milk fat.

The stool, more or less abundant in quantity, is discharged in two or more periods—i. e., evacuation is an interrupted one. The stream in which it flows is not large.

The stool soon becomes less abundant; sometimes after five or six hours or a day it will consist of nothing but a little water with a fecal odor, containing a few patches or shreds of the exfoliated epithelial lining of the mucous membrane (as we see it in severe diarrheas).

There is very much pain—intense pain of a gripping kind. The pain is severest at the time of an evacuation.

The temperature, which at the outset may have risen to 102° or 103° F., never higher, falls very quickly and becomes subnormal. Collapse sets in soon, hastened by the great pain.

It is not bound to any season, it may occur in winter as well as in summer. The worst case of this kind that I saw occurred in the winter months.

CHOLERA INFANTUM.

Supervenes generally in cases in which a moderate diarrhœa has existed for three or four days, a week, or more.

The stools are serous, contain no fecal matter, and have no odor.

The stool, abundant in quantity, flows in a full, large stream, *pleno rivo*, as when a hydrant faucet is turned on full force. The evacuation is an uninterrupted one.

The stool retains its original character to the end.

There is absolutely no pain, either before or during or after the discharge.

The temperature rises to an unusual height— 106° or 108° F.—and remains thus up to within a short time of the fatal issue, to the very end, or to the extreme.

Occurs only in the summer, only in the hot months.

fantum the intestines are frequently found almost normal in character.*

Summing up, we find that this view as to the ætiology of the disease has (a) no basis of fact to rest upon, and (b) does not comport with the natural history of the disease. It must therefore be rejected.

(c) *Sunstroke*.—This theory can be at once and absolutely rejected without further argument. Sunstroke is the result of direct and continued exposure to the rays of the sun. There is no history of such exposure in cholera infantum. I am positive that in the cases coming under my own observation the children were not in any way so exposed. The observations of physicians in general are confirmatory of this. Furthermore, and most important, examinations of the brain after death have disclosed no lesions, certainly none of the pathological conditions always seen in cases of sunstroke.†

In any investigation as to the ætiology of cholera infantum the following circumstances attending its appearance must be kept in mind:

1. The disease occurs in the period of dentition invariably.‡
2. It generally makes its appearance in children who are already suffering from diarrhœa (dyspeptic or catarrhal).
3. It occurs only in the hot months, and
4. Only at a time when the atmosphere contains a great deal of moisture—when it is very sultry.

From the invariability with which these circumstances attend the appearance of the disease, indeed appear as part of the natural history thereof—and upon these points there is universal agreement—they can not be regarded otherwise than as causative factors. As to the mode of action of each of these individual factors, it may be said, taking into consideration only what is well established:

1. That dentition may cause various disturbances in the general economy of the child. These are chiefly of the digestive tract; next in order of frequency are those of the cerebral centers. Even those who do not coincide fully with this must at least admit that dentition markedly predisposes the infant to such disturbances of its economy, and that slight, even trivial, causes, that at other times would be altogether without effect, will at this period produce quite marked pathological conditions.

2. That great summer heat, rendered still greater by the unfavorable conditions under which a very great number of children live, aggravates existing troubles or produces them de novo. This point has long since established its place in papers Heat Stroke (thermic fever) in Infants" and Summer Complaint, etc. §

3. That "the degree of moisture contained in the atmosphere makes a great difference in the height of the temperature, elevation which may be regarded as the measure

* *Amateur* (London). 31 J. *British Medical Journal*, 1893.

† *Ibid.*, 1893, p. 100.

‡ *British Medical Journal* (London), 1893, p. 100.

§ *Medical News*, August 1, 1893. *Continental Medical Journal*, 1893, p. 100.

¶ *The First Medical Journal*, 1893, p. 100.

As additional proof of this, the results of post-mortem examinations can be invoked. Milk intoxication scarcely produces serious gastrointestinal disturb. In the post-mortem examinations of children that have died of

most frequently only a condition of loose bowels is called forth. It is sufficient to say, referring here to my former paper on Summer Complaint,* that the digestive function of the stomach in hand-fed children is more or less enfeebled; that it is still further impaired in vigor by the great heat of the summer; that, therefore, a very trifling irregularity in diet, a few fibers of meat, a piece of sausage, a minute piece of fish (and frequently these are not even fresh) will give rise to a most dangerous gastro-intestinal irritation. From this aggravation of a previously mild diarrhoea and from milk intoxication cholera infantum is readily differentiated by the difference in symptomatology already set forth above.†

TREATMENT.—The methods of treatment hitherto applied, the digestive ferments, the intestinal antiseptics, etc., have not proved at all effective. The *modus curandi* that I hold to be the best, the most energetic, as the emergency requires, and that meets symptomatic and pathological indications, is the one employed by the older physicians in the treatment of Asiatic cholera:

1. Calomel, in minute doses, well triturated with sugar of milk, to arrest the vomiting.

R Calomel..... gr. jss.;
Sach. lact..... gr. xx.

Mix, triturate thoroughly, rub for ten minutes, and divide into twenty equal powders.

Sig.: Half a powder, dry upon the tongue, every fifteen minutes.

2. Blisters, for their exciting action upon the cutaneous nerve-filaments and through them upon the abdominal vaso-motor system. Though I do not at all favor blisters in young infants, this is one of the very few instances in which I advocate them, and I believe that a man has not done his whole duty who has neglected the use of this powerful remedial agent in a case of cholera infantum.

3. For the high temperature, an ice bag placed under the nucha, or a Chapman bag to spine and nucha; much better still, the wet pack, as described by me in my paper on heat stroke;‡ if this is impossible for whatever reason, a heavy towel wrung out of the water is spread lengthwise upon a board sheet (or piece of calico) and the child laid upon it naked, or clothed in a thin chemise only. The towel or pack is changed as soon as it feels warm to the touch.

4. For the great thirst a piece of ice can be placed in a chamberlain bag beneath the child's chin, or such like like a fan, or it can be put held in the child's mouth, or upon its lips. The wet pack or towel will greatly aid in allaying the thirst. No fluid should be given until the temperature is lowered and the stools changed to diarrhoea.

If inspired these measures the little patient commences to fall, we should resort to hypodermic injections of hyposulphite of soda, or a phenolphthalein emulsion. However, before that it is more fortunate when the little patient succumb upon the quiet of a summer in season.

* See New York Medical Journal, January 17, 1891.

† See especially the cases recorded under the title of "summer complaint" in my paper on "cholera infantum," New York Medical Journal, July 1, 1891.

‡ See New York Medical Journal, November 10, 1891.

in saving them by this measure. At first a stronger solution, 2 to 100, was used; later the physiological solution, 6 to 1,000. Six to eight Pravaz-syringefuls were injected in rapid succession. Occasionally in the course of a day thirty to fifty grammes were injected.

After we have succeeded in allaying the thirst—and, as already indicated, this will be synchronous with a fall in temperature and a change in the character of the stool—we may attempt to nourish the child; the easiest way of doing this, without fear of overloading the greatly debilitated stomach, is to administer liquid peptonoids, very cold, in very small quantities, half a teaspoonful dropped slowly on the tongue every hour, or the expressed juice of raw beef, given in like manner. Later on, if this is well borne, the quantity can be gradually increased. A few drops of genuine old tokay can now also be given either pure or mixed with the peptonoids or beef juice. For the next twenty-four to thirty-six hours the greatest care must be exercised in the feeding of the child, giving small quantities at rather long intervals (not less than two hours).

NEW YORK: J. B. LIPPINCOTT, ASTOR.

CLINICAL VARIETIES OF SUPPURATION OF THE MIDDLE EAR.

By GEORGE W. CALDWELL, M. D.,

CHIEF CLERK IN THE NEW YORK HOSPITAL.

In order to clearly comprehend the subject of suppuration of the middle ear one should at the outset remember that this term is used in the generic sense, and includes several distinct subdivisions of otorrhoea—this differentiation being controlled by certain anatomical variations which normally exist in the caliber of the various recesses and passages between the ossicles, ligaments, and air cells of the tympanum, and their effect on drainage and ventilation.

With the exception of a few cases of traumatic and tubercular lesions of the tympanic membrane, it may be said that all chronic suppurative diseases are due to acute attacks which, through neglect or inefficient treatment, have failed to undergo resolution. The causes of these acute attacks will most frequently be found in acute catarrhal disease of the upper respiratory tract, or acute exacerbations of chronic diseases of the nose and throat, which in turn will be found as dependent upon some constitutional pathology, or localities which are removable.

Thus, adenoid vegetations in the vault of the pharynx are the most frequent cause of acute otitis, and chronic ear disease in children and youths, while in adults the otitis media and will at times be secondary to the post-nasal portion of the septum or hypertrophy of the posterior tip of the turbinated bodies. A nasal or pharyngeal lesion may be so situated as to cause interference with nasal respiration and yet be sufficient to produce an otitis media or even cause of otitis media, thus the bulk of the hyaline hypertrophy is not sufficient to obstruct nasal respiration but is located so as to exert pressure on the cartilaginous portion of the Eustachian tube and interfere with its function. Mr. Milligan, of the Massachusetts Eye Institution,

England (1), in an analysis of three hundred cases, gives the order of causation as follows: Forty-six per cent. due to acute nasal catarrh; twelve per cent. to naso-pharyngeal catarrh; twenty-four per cent. to scarlatina; nine per cent. to measles.

In all these causes it is evident the disease reached the middle ear by extension through the Eustachian tube.

Suppuration having once passed the acute stage, it becomes one of the most chronic diseases which we encounter, as a study of hospital reports will confirm.

In the paper of Mr. Milligan above referred to, thirty-five of his cases had lasted five to ten years, fifty-six from ten to twenty years, twenty-two upward of twenty years, and in fifty the exact number of years was not remembered. In a classified report of two hundred and ninety-three cases treated at the Dispensary of the University of Pennsylvania, Dr. Brown (2) gives seven per cent. of forty to sixty years' standing, nineteen per cent. twenty to forty years, twenty-nine per cent. five to ten years, and forty-four per cent. from six months to five years. Doubtless the chronicity of this disease, as in other surgical diseases, is influenced by the molecular resistance of the individual, and yet it is found in the robust as well as the cachectic—among the leading families of the world and the children of the poor. But there is another and more important controlling factor which is not mentioned in otological literature with the prominence which it deserves. It will be remembered there are four more or less separated spaces in the middle ear—viz., the atrium, the attic, the antrum, and the mastoid cells, extending in this order from the Eustachian tube to the apex of the mastoid process. Infection taking place from the Eustachian tube, the first only, or the more remote departments, may be consecutively involved, each aggression increasing the severity and danger of the disease and the difficulty of its treatment. If the communication between these principal chambers is so free that congestion is not sufficient to interfere with free drainage and the drum membrane ruptures or is opened, the danger is comparatively slight, but if these conditions are not present there is imminent danger not only to the function of hearing but to life as well. The attic cases have only recently been recognized as distinct clinical varieties.

This space, intervening as it does between the atrium and the antrum, is somewhat cut off from these cavities by the body and short process of the incus and the head of the malleus, and by a number of the radial perforations of the drum membrane and secondary drum strands. The products of Pus and other of less continuity described by Schaeffer in this region are responsible for many of the distressing cases of otitis media. The cellular structure is favorable for the retention of infectious material, which, being scattered by treatment directed to the middle ear proper, passes its destructive course. The favorite place for exposure of the pus of Pus is behind the Shrapnell's membrane, which forms its external wall. Perforations in this region are small and not usually difficult to find and are, according to M. Brichault, Scharlach and Colles, etc., associated with cases of the middle ear. Dr. Keeney (6) comments on the fact that this portion of the tympanic

membrane is formed by a reduplication of mucous membrane and skin only, which favors extension to the periotum.

The purulent process may localize itself in this system of cavities and pus escape through a perforation in Shrapnell's membrane without it being possible to prove the presence of any secretion in the tympanum, the communication with the lower space being obstructed by swelling inspissated pus or exuberant granulations. The walls of the malleo-incudal niche merge behind into the antrum. Purulent inflammation of this niche may spread by continuity to the antrum, and, *vice versa*, pus flowing from the antrum is very apt to infect this chain of cavities and produce a rupture of the flaccid membrane, provided the normal opening of the cells becomes occluded (6), (7).

In this connection it is of interest to know whether or not there is a normal opening between the external auditory canal and the attic through the disputed foramen of Rivinius. Walb (8) and von Troeltsch (9) hold there is such a foramen, and infection may take place directly through it, while Rudinger (10) and Randall (11), admitting its not infrequent occurrence, consider it simply an unclosed perforation of Shrapnell's membrane. It is a clinical fact that in many cases of perforation in this region it is impossible to get a perforation whistle by inflating the middle ear. This is due to closure of the narrow communication by swelling. The experiment of Mörpugo has shown that this may be.

By puncturing Shrapnell's membrane of a normal ear he was able to get the perforation whistle on inflation, but no such passage of air could be produced in a congested ear.

This is an indication of the futility of the ordinary medication in these cases. Washes and powders do not reach the seat of disease, and only suffice to keep the external auditory canal approximately clean. Pus in this position is practically outside the body and does little harm. Cleansing the skin around a persistent sinus is not treatment—it is cleanliness, and as such is commendable; but the careful surgeon goes directly to the removal of the cause of the sinus, whatever it is and wherever it may be found.

Suppurative disease of the upper posterior tympanic space is particularly liable to involve the mastoid cells. Disease of these cells does not necessarily mean immediate serious symptoms, as pain, tenderness, or fever (12). By continued maceration in septic pus the bonelets become carious, the joints ankylosed, adhesions form, and thereby hearing is lowered. In children the health is depressed, the physical, and especially the mental, development retarded. They are slow to learn, and are called stupid and punished in proportion to the ignorance of their natural guardians in the same manner as are children with defective eyesight. Handicapped by lowered hearing, depressed in health by their disease, injured in pride by its repulsiveness, unjustly punished, they become sullen, careless, and backward. In addition there is a certain amount of cerebral circulatory disturbance produced by chronic congestion over the temporal bone which is a predisposing cause of various nervous diseases.

In chronic disease of the mastoid cells life itself is in constant danger, for in addition to the pus there accumulates in the air spaces a caseous mass of an intensely septic nature, similar in appearance to that found in tubercular glands, and composed of inspissated pus, decomposing fats, epithelial cells, streptococci, cholesterol, and various septic bacilli and cocci (13, 14, 15, 16, 17). This can not be discharged through the middle ear and can not for any length of time remain quiescent. Osseous trabeculae become carious and are broken down, and should any impediment to the free escape of pus occur, the inner plate may become necrotic and give way under the pressure and the meninges of the brain become directly infected; or septic material may be carried through some of the veins which flow into the lateral or superior petrosal sinuses, producing thrombo-phlebitis or metastatic abscesses in various parts of the body.

The usual symptoms of mastoiditis—such as redness, tenderness, pain, and swelling behind the ear—are not always to be waited for in deciding upon an operation for the relief of pus in the mastoid cell.

In eighty cases reported by Green, of Boston (18), thirteen per cent. showed no external signs. D. Milton Green (19) reported five cases without external signs, yet pus was found in the mastoid at the operation, or, when an operation was refused, at the autopsy.

What, then, should be our treatment of suppuration of the middle ear? Manifestly the first indication is to prevent, as far as possible, further extension of the disease in the acute stage. To that end absolute rest in bed should be enjoined, hot applications made, and paracentesis of the membrane tympani performed as soon as swelling appears. By this means the tension and pain are reduced and the liability of extension lessened. The progress of pus into the external canal may be favored by the induction of a partial vacuum by the use of Siegel's speculum and the discharge gently removed by cotton applicators.

No injection of fluids should be allowed, as the tendency is to force pus into the deeper parts. The nose and throat should be examined and any abnormality corrected. As soon as a diagnosis of mastoiditis is made the cell should be opened without delay, as the danger is not in the operation but in the lack of it. Transillumination of the mastoid cells by the electric light, as proposed by me in the *New York Medical Journal* of July 3, 1893, will be found of great assistance in making accurate diagnosis. If pus is believed to exist in the mastoid cells there is no more reason for delay in an operation than there is in appendicitis, as the disease means either speedy death, or continued suffering, or a great duration and frequent recurrence of the disease, any one of which the patient may die. The disease is not a benign or quiescent disease for the reason that the pus is contained in bony cells which are so contractile as to expand their contents and thus to escape by gravity, for the cells are of such a labyrinthine formation that they can not drain in any position; therefore pus must remain in a focus ready to produce recurrent attacks.

The object of the operation is to make a sufficient opening in the mastoid to allow the thorough removal of

pus, debris, and carious bone from all the cells and antrum. The greatest danger in operating is in opening the lateral sinus, with the consequent danger of hemorrhage, septic infection of the meninges, and thrombo-phlebitis. Various methods of operating have been proposed, that of Schwartz being in greatest favor.

Küster and von Bergmann chisel away the posterior wall of the external auditory canal after displacing the auricle forward, but this method has not received favor in America. Bezold (20) and Bermingham (21), after measuring a hundred skulls, reached conclusions which are little more concrete than that the course of the lateral sinus varies considerably in different skulls, and therefore in operating keep as far anterior as possible. Körner, of Frankfort on the Main (22), in an elaborate comparison has observed that in brachycephalic skulls the sinus encroaches more deeply into the mastoid process than in those in which the cephalic index is high.

There is a large class of cases which are apparently simple cases of otitis media suppurativa chronica, but which are really unrecognized attic cases. The drum membrane is perforated, retracted, distorted, adherent. There is continuous or intermittent discharge, sometimes fetid, always unsightly, and hearing is considerably lowered. The vibratory function of the membrane is destroyed by a large perforation. The ossicles are adherent together, displaced, or stiff and useless; indeed, worse than useless, for, being non-vibratory, they act as a stop on the membrane of the oval window, preventing a direct response to the sound waves which impinge directly upon it through a large perforation. In other cases the membrana vibrans is intact, but a perforation in the flaccid membrane leads directly into the attic, where suppurations and granulation tissue about the ossicles have rendered them useless. Caries of the temporal bone may add to the causes which keep up the suppuration. It is in this class of cases, as well as in certain cases of dry catarrh, that the operation of removal of the ossicles has been successfully practiced. The objects of the operation are to lessen the danger of mastoid complications by favoring drainage, to stop suppuration by removing necrotic bone and to relieve subjective noises, and improve hearing by relieving pressure on the stapes and allowing direct vibration of the secondary membrane to the cochlea.

In thirty-two cases reported by Ludwig (23), the incus was found to be carious in eighty-four per cent, and both the incus and malleus in fifty per cent. The incus was found to be carious in twenty cases reported by Green (18), Saxton, Bennett, and Collins (24), it appears to be carious in about the same proportion as usual, while the hearing was impaired in fifty-two and a half per cent. The malleus was removed in four cases while the hearing was from six to fifteen but for ninety per cent. The operation gives in a slight way, but no more, an artificial dentistry and an artificial knowledge of objective soundness. My own experience with it has been so favorable that I believe it will cause a supposition that the bone surgeons live their lives in and in dry weather, wash the attic with mace, and increase the hearing when

bone conduction is good. The value of the operation is no longer a matter of doubt among progressive otologists.

References.

1. *Med. Chron.*, London, December, 1891, p. 409.
2. *Med. and Surg. Reporter*, 1890, p. 444.
3. *Text-book*, Edinburgh, 1892, p. 510.
4. P. 63.
5. *Am. Jour. of the Med. Sci.*, 1891, p. 477.
6. *Trans. of the Am. Otol. Soc.*, 1889, p. 428.
7. Politzer. *Anatom. and Histolog. Dissection*, 1892, p. 88.
8. *Arch. für Ohrenheilkunde*, xxv.
9. Von Tröltsch. *Lehrbuch*, vii. Aufl., S. 39.
10. *Zeit. für Otol.*
11. *Trans. of the Am. Otol. Soc.*, 1889, p. 409.
12. Roosa. P. 493.
13. Grieseler. *Annales des maladies de l'oreille*, 1889, p. 526.
14. Kanthack. *Arch. of Otol.*, 1890, p. 25.
15. Rohrer. *Deutsche med. Woch.*, 1888, p. 44.
16. Scheibe. *Arch. of Otol.*, 1890, p. 168.
17. Heineman. *Proc. of the New York Path. Soc.*, 1891-'92, p. 69.
18. *Am. Jour. of the Med. Sci.*, 1890, p. 575.
19. *Jour. of the Am. Med. Assoc.*, Nov. 2, 1892.
20. Pomeroy. *Dis. of the Ear*, p. 296.
21. *Dublin Jour. of Med. Sci.*, 1891, vol. xci, p. 116.
22. *Arch. of Otol.*, vol. xv, p. 281.
23. *Arch. für Ohrenheilkunde*, vol. xxix, p. 241.
24. *Am. Jour. of the Med. Sci.*, May, 1891.
25. *Am. Jour. of the Med. Sci.*, February, 1890.

45 EAST FORTY-FIRST STREET.

A NEW AND PERFECTED ENTERIC PILL.

By LOUIS WALDSTEIN, M. D.

It has long been considered desirable to reach the intestines, especially the upper tract, by medicines which, taken by the mouth, would pass the stomach without being dissolved. The experiments made by Unna, of Hamburg, with a keratin coating, as well as those made by others with various fatty substances with a high melting point, shellac, salol (Dieterich), etc., have not proved successful.

The trend of the modern treatment of intestinal disturbances is directed toward the neutralization or destruction in a chemical sense of those soluble toxic principles (ptomaines) which are the products of the metabolism induced by the numerous forms of micro-organisms which we have recognized as the cause of enteric fevers and of putrefactive changes in the intestinal contents. Furthermore, recent investigations have made it appear more than probable that certain symptoms in nervous complaints, functional chiefly, in neurasthenia, melancholia, insomnia, and many more, even epileptic seizures, may be in great part due to the effect of soluble toxic material absorbed from the intestinal tract. As far as I may be permitted to

venture an interpretation, I deem it my duty to observe that here we find the intimate causal connection here referred to is not a doubt. This is not the moment to refer to definite instances, as I am still continuing researches in this direction, but also the number of cases, however

large, of one practitioner is much too small to reach generally acceptable conclusions, and since I consider the subject of great practical importance, I thought it well to call the attention of practitioners, more especially those who have hospital facilities, to the pill which has seemed in my hands to meet all the requirements of a true enteric pill.

When Unna first published his results I began to employ various methods of coating pills, assisted by a number of druggists of this city; but in whatever combination or proportion the various substances, insoluble in dilute acid and soluble in dilute alkaline liquids, were employed, the coating was incomplete, friable, or withstood, when perfectly seasoned, the action of the enteric fluids and passed through almost unchanged.

The coating which I now employ, and which answers all purposes required of such a mass, is a mixture of shellac and salol dissolved in alcohol. This mixture can be spread over a pill in a very thin layer and remains unchanged and perfect without becoming brittle for an indefinite time.

In order to determine the behavior of pills treated in this manner I have given methylene blue and found by lavage of the stomach that it remained undissolved quite as well as in acidulated gastric juice in the laboratory experiment, and that, on the other hand, the fæces and urine passed were colored. Small doses of intestinal cathartics act much more promptly than if they were administered in the usual manner. I am unable to say at present, however, what effect, if any, can be observed if typhoid fever or enteritis were systematically treated with antiseptic remedies protected by the coating I am recommending in this imperfect manner. I propose making a thorough trial in various cases of self-intoxication from ptomaines as well, including some forms of eczema and urticaria, which have, I am quite sure, their origin in the intestinal canal. It will also prove useful to follow the late Sir Andrew Clark in treating with the enteric pills those anæmias which are caused by fecal retention.

Among the pills which I have caused to be made is included one containing extractum pancreatis and bicarbonate of sodium, to be tried in those cases of diabetes mellitus presumably dependent upon diseases of the pancreas.

I do not pretend to give here an exhaustive list of indications for intestinal medication; they will suggest themselves to the reader; nor is it the object of the present preliminary communication. I wish merely to facilitate the work along these lines by communicating to the profession my confidence in my new pill coating and to invite their collaboration. In order to bring this easily within the reach of those most interested, I have requested Mr. M. J. Breitenbach, of this city, to keep in stock a supply of "enteric pills," for which I have furnished some formula that may prove most acceptable for preliminary work.

In conclusion, I take much pleasure in acknowledging the helpful courtesy of Mr. Breitenbach during the several stages of my experiments.

45 EAST FORTY-FIRST STREET.

It seems that the Hôtel Dieu, the Notre Dame, and the Western Hospital, of Montreal, follow a more liberal and, we must say, a more enlightened policy; they receive any qualified physician's patients and afford them all their resources at the minimum charge, allowing them to remain under their own physician's care. Our contemporary relates that not long ago certain of the physicians connected with the Protestant General Hospital, in Ottawa, passed a resolution that only patients attended by the hospital staff should receive the benefits of the nursing and diet provided by the institution. At this the profession in general protested indignantly, and their protest was so thoroughly supported by the community that the obnoxious resolution was rescinded, but its spirit was kept up, for, rather than allow patients of outside practitioners to occupy private rooms, these limited resources decided to exclude everybody from the privilege. This virtual assumption of sovereignty of the profession of a hospital like Mount Allison is hardly of a more commendable character. Our Montreal contemporary affirms that it is a hospital and is supported by contributions not only from the rich, but from the poor, and is regarded as one of the best and noblest hospitals in Montreal. It is true that the year it closed its doors, it had a patient attendance of 11,000 and a nursing staff of 100, but it is not the number of patients that counts, but the quality of the nursing. It is not the number of patients that counts, but the quality of the nursing. It is not the number of patients that counts, but the quality of the nursing.

lance, and on 'coming to' finds himself in a private ward of this general hospital. He asks that his family physician may be summoned, but, should that gentleman not be one of the staff, the request is refused. Should he even present himself at the bedside of his friend, he will not be permitted to treat or even advise one who is now, *volens volens*, the patient of this particular doctor on duty for the time, who will studiously exclude every possibility of outside interference. Should the patient ask to be removed, his family or friends will be at once warned of the danger attending any such change, and he is thus persuaded, forced would be the better term, to accept the services of one who is probably a stranger to him, at the risk of severing, it may be, a lifelong connection, and with it all the moral advantages begotten of years of mutual confidence and esteem."

The annihilation for the time being—and sometimes, thanks to the hospital doctor's skill and assiduity in blowing his own horn, for good—of the bond between a hospital patient and his family physician is certainly not in itself a good thing and not, we should say, made necessary or desirable by the exigencies of hospital work. A hospital must, of course, have its regular professional staff, but we hope some progress may be made before long in the effort to mitigate its action as an extinguisher of private practitioners' privileges and aspirations.

PSEUDO SCIENCE AND THE COMMUNION CUP.

If we return to the subject of the alleged danger of the spread of disease through the medium of the communion cup, it is not because we have the slightest idea that any considerable proportion of the medical profession will be induced by the agitation now going on to conclude that there is any such real danger, but because, if the agitators continue to have their say without opposition, it is to be feared that the public will speedily come to look upon professed sanitarians as ridiculous. We have no desire that they should so figure before the community. The fundamental error made by those who urge the danger of the communion cup seems to us to be that they lay before the public as the real issue the abstract question of the possibility or impossibility of morbid material lodged on the cup being able to exert the same infective power that it would show if deposited elsewhere, and they throw the burden of proof upon their opponents, whom they are inclined to charge with resting their opposition on some such ground as that of presidential interference. Now, this is not the question at all. The question is whether, because of the exposure of the danger in the communion cup, there has arisen, by reason of the publicity given to the question, a danger that it is not necessary to discuss.

It is not to be supposed, however, that the danger is a real one, and that it is necessary to discuss it. The danger is a real one, and it is necessary to discuss it. The danger is a real one, and it is necessary to discuss it.

The danger is a real one, and it is necessary to discuss it. The danger is a real one, and it is necessary to discuss it. The danger is a real one, and it is necessary to discuss it.

a common chalice cup in the administration of the Holy Communion is certainly exaggerated, if, indeed, there be any danger at all. Thirty thousand clergymen of the Anglican Church consume what remains of the wine, after the other communicants have partaken, once every month at least, and the majority of them every Sunday; and I never heard of a case of infectious or other disease communicated in that way. I have done it myself for thirty years without a thought of danger or any evil results following. A more healthy body of men than the clergy does not exist, as every life insurance company will testify. The scare about a common chalice is needless. The theory of danger is exploded by the facts in the case."

When the promoters of this agitation can satisfy us that in a single instance disease has been communicated by the use of a common cup in the communion, we shall be willing to modify our judgment; in the mean time we see no end to be gained with their clamor except to bring them into notoriety, and we repeat, what in substance we have said before, that the community may rest assured that the medical profession does not regard the use of the communion cup as dangerous so long as the Academy of Medicine continues to make use of its loving-cup.

MINOR PARAGRAPHS.

THE MEDICINAL PLANTS OF INDIA.

THE Indian Drugs Supply Company, of Calcutta, has recently published an interesting pamphlet, by Purna Chandra Saha, formerly curator of the Hugli Botanical Gardens, entitled *The Illustrated Hindu Medicinal Plants*. There are numerous pictures of plants—some well known and others little known outside of India—and the plants are treated of satisfactorily in the text, which is partly in English and partly in Hindustani.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 4, 1894:

DISEASES.	Week ending Aug. 28.		Week ending Sept. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever,	229	31	222	15
Scarlet fever,	222	31	14	3
Cerebro-spinal meningitis,	0	1	0	0
Measles,	15	1	14	1
Diphtheria,	110	33	101	32
Small-pox,	0	0	18	0
Tuberculosis,	32	134	30	104

A Physician's Services gratefully Remembered.—Dr. Charles M. Green writes us follows to the *Boston Medical and Surgical Journal*: "The following instance of long-remembered gratitude for gratuitous medical service may be of interest to your readers: Many years ago a well-known physician of Boston attended a lady who was unable to pay for his services. Years passed; the physician died, and his family became scattered. But in 1893, thirty years after the doctor's death, information was received by his children that a general of the English Army had died in London, leaving a will containing the following clause: 'I give and bequeath to the heirs of the late

Proceedings of Societies.

CANADIAN MEDICAL ASSOCIATION.

Annual Meeting, held in St. John, N. B., on Wednesday and Thursday, August 22 and 23, 1894.

The President, Dr. T. S. HARRISON, of Selkirk, Ontario, in the Chair.

Epilepsy.—In a paper on this subject Dr. HATTIE, of Halifax, described various changes that had been said to take place in the cerebral cells during fits of different kinds, and pointed out that they might be due to the influence of some irritant acting upon them to produce a state of excitability, or to something produced in the brain and not eliminated quickly enough, so that the nerve explosion was Nature's method of getting rid of it. Convulsions were due to an abnormal performance of the functions of the cells of some part of the nerve centers, and upon the particular part depended the character of the seizure. The cause might be a poison generated in the system, and when this was the case the rational treatment would be eliminative and antiseptic. This he had tried by giving, in addition to potassium bromide, beta-naphthol and attending to the emunctories. The results had been very gratifying.

The subject was discussed by Dr. CAMERON, of Toronto, and Dr. WRIGHT, of Ottawa.

Tuberculosis of the Arm cured by Erysipelas.—Dr. MUIR, of Truro, gave the history of such a case. The patient was a woman, thirty-nine years old, who had had the disease in a well-marked typical form for fourteen years. The bacillus of tuberculosis was found in the discharges. The patient had been anesthetized, the sinuses scraped, and iodoform dressing applied, but little if any improvement had taken place until the end of five weeks, when, quite accidentally, the wound had become infected with erysipelas. The woman had then become very ill, but had finally recovered from the erysipelatous attack, and shortly afterward the tuberculous trouble had disappeared entirely. Photographs of the arm after cicatrization were shown.

The President's Address.—This related to his experience in medical matters for half a century back. At the outset of his professional career he had settled in the wilds of Ontario, near Lake Erie. That was in the days of ague, bilious remittent fever, murrain in cattle, and other diseases which, since the country had been cleared up, had become almost extinct. He gave a graphic clinical history of these various diseases and portrayed the different forms of treatment employed, both before his arrival in the settlement and afterward, especially by those who sought to charm away disease and by those who treated it according to *Pharmaceutica*. In those days phlebotomy was considered by the people to be the sovereign remedy, and some of the medical practitioners bled, blistered, and salivated. In the latter part of his address the president advocated the establishment of uniform examinations for all who wished to practice in the Dominion, and said that the standard should be of the highest.

Appendicitis.—Dr. BROWN, of Montreal, read a paper on this subject in which he gave his experience, including forty-eight cases. He divided these cases into the gangrenous, the perforative, the non-perforative, and those in which the appendix was secondarily infected. The cases should be grouped, he maintained, by a surgeon from the first, a little surgery, he deemed medicinal. He was in favor of surgical interference in nearly all cases.

Dr. THOMPSON, of Montreal, thought that the operation was performed unnecessarily. No young man should attempt to

open the abdominal cavity without a consultation with one or more other physicians. The speaker had prevented operations twenty-five or thirty times, and in only one case had he had occasion to regret the course he had pursued. He was decidedly in favor of conservatism.

Sir JAMES GRANT reported two cases, one of the gouty form and the other rheumatic. He found it difficult to know when to operate, and he knew of no more perplexing point in surgery. It required great observation, discrimination, and judgment to know how to deal with the disease. He did not believe the trouble was due to concretions formed in the appendix, but attributed it to the haste and rush with which food was eaten at the present time and to allied causes.

Dr. SHEPHERD, who remarked that the surgeons got the worst cases, thought it was difficult to say just what proportion of patients were operated on. He advocated operating between the attacks as the safest course. In regard to McBurney's point, he thought the tenderness was due, not to the appendix, but to the inflamed condition of the mesenteric glands.

Dr. STRANGE believed in non-interference until there was evidence of pus, and then he would open the abscess like any other abscess. He leaned to conservatism in treatment.

Dr. CAMERON was in favor of conservative treatment. In the majority of his cases he had not operated at first, and he had found that the results had been as good in those cases as when the operation was performed early. In the gangrenous form, due to embolism of the appendicular artery, one should operate early.

Dr. BELL stated that in three of his cases the appendix had been wholly gangrenous. When he had followed the so-called conservative treatment, that consisted in waiting, he had lost a far greater proportion of his patients than he lost now. Of course, the very mild cases, in which, although all the typical symptoms might be present, they passed away in the course of twelve hours, need not be interfered with; they were probably cases of typhlitis.

Eye-strain Headaches.—Dr. MORRISON, of St. John, read a paper on this subject. Tenotomy, he said, relieved some of the reflex troubles for a time, but it was not ultimately successful. The trouble was really due to imperfect curvature of the cornea, and the imperfection might be very slight. This condition, added to the delicacy of the muscle of accommodation, when much near work was to be done with the eyes, overtaxed the ciliary muscle, and it either gave way or produced those reflex headaches which were so distressing. The pain was usually situated in the neighborhood of the temples, but sometimes extended to the occiput and down the back. Sometimes numbness occurred in other parts of the body, and in some instances digestive disturbances were a decided symptom. A proper correction of the myopia, hypermetropia, and astigmatism, together with the use of tonics, would remove the headache. The muscle would recover just as a sprained limb would if treated properly; the use of proper glasses was a crutch for the strained ciliary muscle.

The Influence of the Mind on the Body.—This was the subject of the address in medicine, delivered by Dr. BAYARD, who gave an outline of the anatomy and physiology of the nervous system, referring especially to the subject of pain. Instances were given in which emotions of various sorts caused contraction and dilatation of the terminal arteries with hyperemia and stimulation of the secretory glands, or anemia and checked secretion. The prevention of various nervous diseases was said to be attainable by reform in our educational and social systems.

Disease of the Ovaries and Fallopian Tubes was the subject of a paper by Dr. A. LAFORTUNE SMITH, of Montreal, who

gave numerous clinical histories and showed many pathological specimens.

Some Forms of Functional Derangement of the Liver was the title of a paper by Dr. J. E. GRIMM. The author dwelt on the great importance of maintaining the integrity of the hepatic cells. They acted as a guard against invasion of certain poisons into the general circulation. Among these poisons were arsenic and phosphorus in the mineral kingdom, the poison of decaying meat and old cheese in the organic kingdom. Other poisons acting in the same way that he mentioned were those generated in a distended stomach, the specific toxins of typhoid fever and similar diseases, and the poisons generated in the intestinal tract in cases of constipation. These various poisons tended to injure the cells, and, passing into the general circulation, exerted their effects on the nervous system and on other parts of the economy. It was pointed out that an ordinary attack of biliousness depended on some occurrence of this kind. It was absolutely necessary that the exact cause of the disturbance should be ascertained before rational treatment could be employed.

Operations on the Brain.—Dr. HINGSTON reported four cases. Two of them had been for epilepsy, and had not been successful. One case was that of persistent pain located in one spot. It had been incessant and severe for a year. In trephining, a hydatid had been found pressing on the brain and it had been removed. The patient had made a good recovery. The other case was that of a young man, whom the author presented, who had suffered for twenty years as the result of a fall and injury to the right side of the brain. He had been the subject of paralysis of the left arm, spasm and overdevelopment of the orbicularis and the zygomatic muscles of the left side, and impairment of sight and hearing on that side. At the operation a thickened portion of bone was found impinging on the brain tissue, surrounded by a cartilaginous material which had been thrown out about it. There was no bleeding upon its withdrawal, and the man's face at once relaxed, and he seemed almost normal in his facial appearance. The arm also improved. The author recommended the use of a large trephine, two inches in diameter, for these operations.

The Prevention of Tuberculosis.—This was the subject of a paper by Dr. J. H. BROWN, of St. John, who cited numerous cases to prove the infectiousness of tuberculosis, and said that, while it was not infectious in the same way that smallpox and typhoid fever were, it was time that steps were taken to prevent its alarming spread. This could not be effected in a day, but the matter could be treated, and it was the duty of the medical man to keep himself advised on the subject, and to counsel his patients of this class and their friends in regard to the best method of the prevention of tuberculosis. Some thought that tuberculosis was hereditary, and addition of alcohol increased its chances. There was, perhaps, something to be said for this, but it was a small factor, and the author would be prepared to which pneumonia, consumption, and other diseases were caused by the phthisis.

Dr. M. S. DUNN, of Hingham, N. S., also attracted attention by the fact that out of 67,648 deaths in the Dominion 7,190 had been from tuberculosis. He thought he presented a correct picture of the importance of the disease as a cause of death. He thought the profession should agree upon the fact that the possibility of tuberculosis exists in the case of everybody, and that the prevention of tuberculosis is a duty of the physician. He also presented a list of the names of the patients who had been cured by his phthisis.

Some Practical Points in the Treatment of Diseases of the Skin.—Dr. J. H. BROWN, of New York, read a paper on this subject, in which he dwelt on the necessity of the most careful attention to the treatment of every case of the

patient and the necessity, also, of continued treatment. In eczema he advised the careful use of new remedies, and recommended the alkalies to combat the acid state of the blood found in eczema. Arsenic should not be used indiscriminately. The custom had been to use irritating ointments, which was wrong. He had found the correction of some fault in the diet or the habits of the patient together with the employment of hygienic and tonic treatment of greater importance than local treatment.

The Use and Abuse of the Various Caustery Agents in the Treatment of Nasal Affections.—This was the title of a paper by Dr. E. A. KIRKPATRICK, of Halifax. He referred to the delicacy and importance of the nasal mucous membrane, and said that too often it had been the subject of harsh treatment. Caustics had been used more frequently for hypertrophic rhinitis than for anything else, and often too severely. He had seen the mucous membrane destroyed by the injudicious use of caustics, and in some cases very serious trouble had followed in connection with the ear, such as loss of hearing and mastoid disease. He used chromic acid in anterior applications and the galvanic caustery for posterior applications.

Dr. HAMILTON, of Montreal, read a paper on Adhesions of the Soft Palate and their Treatment.

Dr. J. T. STEEVES, of the St. John Lunatic Hospital, read a paper entitled A Medico-legal Romance.

AMERICAN ORTHOPEDIC ASSOCIATION.

Eighth Annual Meeting, held in Washington, D. C., on Tuesday, Wednesday, and Thursday, May 22, 23, and 24, 1894.

The President, Dr. A. M. PHELPS, of New York, in the Chair.

Observations on Bending of the Femur in Adolescents.

—Dr. ROYAL WHITMAN, of New York, read a paper on this subject. The author said that this condition of bending of the femur was most commonly found in adolescents who had developed rapidly and who had been subjected to overwork or strain of these parts. In 1889, E. Müller had reported this condition as a new type of disease. He had reported a series of four cases, and during the last two years the author had himself had four such cases come under his own observation. This communication embodied a report of two of the cases. The first was that of a boy who had been admitted to the hospital on June 7, 1892, with a history of having noticed a limp a year before, without assignable cause. This had gradually increased so that in six months it had become necessary to use a cork sole on his shoe. He presented the general appearance of a patient with congenital dislocation of the hip. The actual shortening was three quarters of an inch, and the apparent shortening three inches and a half. There was no limitation of flexion, extension, or rotation of the limb, and all movements were free and painless. The head of the bone was found to be in the acetabulum. In the second case reported the diagnosis of bending of the femur had been made at an earlier stage, so that he was able to report the results of his treatment.

During the patient's condition, from time to time. The patient had a history of having noticed a limp a year before, without assignable cause. This had gradually increased so that in six months it had become necessary to use a cork sole on his shoe. He presented the general appearance of a patient with congenital dislocation of the hip. The actual shortening was three quarters of an inch, and the apparent shortening three inches and a half. There was no limitation of flexion, extension, or rotation of the limb, and all movements were free and painless. The head of the bone was found to be in the acetabulum. In the second case reported the diagnosis of bending of the femur had been made at an earlier stage, so that he was able to report the results of his treatment.

on attempting to flex them they were immediately crossed one upon the other. There was no pain or spasm. By May 1, 1894, adduction had increased so much that it was only with the greatest effort that he was able to pass one leg by the other.

This bending of the femur appeared to be a comparatively rapid process, and the head of the bone was usually pressed downward and backward in the direction of least resistance. Where the condition affected only one side, the symptoms were stiffness and limping due to the shortening, but if both sides were affected there was adduction with a peculiar rolling gait due to interference of the knees. The character of the pain experienced by the patient was similar to that found in cases of knock-knee and bowleg in adolescents. The treatment consisted in (1) removing the exciting cause—overwork or strain usually; (2) local massage and manipulation directed toward overcoming the restricted motion; and (3) osteotomy below the trochanter. Ordinarily these cases did not present themselves until they had reached a stage in which the diagnosis was not particularly difficult. In all cases of dislocation of the femur upward the neck of the displaced bone could be traced upward to its abnormal situation, but in bending of the femur only the prominent trochanter could be felt. Where the distortion was due to necrosis or other chronic disease, evidences of these conditions would be present and would prevent one from making an erroneous diagnosis. It was important to remember that there was no local swelling or infiltration in these cases of bending of the femur, and that the only motions that were restricted were abduction and inward rotation. If the condition went on unchecked, the deformity showed a marked tendency to increase upward.

A Hip Splint.—Dr. WALLACE BLANCHARD, of Chicago, then exhibited his hip splint, which he had used in his own practice with much satisfaction for the last twenty-two years. It made longitudinal traction by means of adhesive straps, and lateral traction by a band passed around the thigh. The main strip down the back of the thigh and leg furnished the necessary immobilization, and the splint, when properly molded to the body, not only furnished support, but was comfortable and should not cause pain. It was equally applicable to patients in bed and walking patients, and should not be removed except when it was necessary to make repairs. He had found that eight to nine pounds of traction were usually sufficient for children, but that fifteen or twenty pounds might be required for the first two or three days of treatment.

The Question of Priority in the Application of Lateral Traction to Relieve Intra-articular Pressure in Hip-joint Disease.—The President said that his first paper on this subject had been presented in May 1889, and that in August of the same year Dr. Benjamin Lee had presented a paper in which he had stated that he had been using lateral traction also for some time. Sayre had maintained that he had applied lateral traction two years before Dr. Lee, but Dr. Lee had shown that his father, of fact, he had only applied straps with the object of overcoming inward rotation. The Germans had mentioned lateral traction as far back as 1853, but only as an occasional means of relieving traction.

Dr. BLANCHARD said of Philadelphia, and that in the Hip Splint, and Dr. Lee said himself in his paper, "I am not sure that lateral traction had been described."

Dr. WALLACE said that he followed in the practice of lateral traction, but he did not think that Dr. Lee's was the same as applied in the present case.

Dr. PHELPS said that if the patient was kept in enough abduction the lateral traction could be applied, but that the knee joint would press on the other side of the femur, and that the articular pressure would be increased. Dr. BLANCHARD

splint, which had just been exhibited, but he thought it had one important disadvantage—i. e., that it did not extend below the bottom of the foot.

Congenital Dislocation of the Hip.—Dr. L. A. WEIGEL, of Rochester, reported two cases. The first was that of a boy who had been born after a difficult labor and foot presentation. During the first few days of life he had a number of convulsions. It was noticed soon after that there was an abnormal condition of the hand, but the disability of the leg was not observed for a considerable time. The child was inclined to be vicious and destructive. There was a marked spastic condition of the left arm, which was shorter than the one of the opposite side. The head of the femur was freely movable on the dorsum of the ilium, and, with slight traction and rotation, the head could be drawn down to its normal position, but easily returned to its former situation. He could not determine the existence of a rudimentary acetabulum. Ophthalmoscopic examination showed a double optic neuritis and secondary atrophy from some intracranial cause. Massage was ordered for the arm, and the long traction splint was applied, in order that the limb might be maintained in a proper position and the child enabled to walk about. Examination made recently showed that the child had improved to a remarkable degree. Three weeks ago he had begun to stand and was now walking, but the hand could not be opened voluntarily. His mental condition was also decidedly better. Notwithstanding this great improvement, it was found on removing the hip splint that the head of the femur returned just as readily to its abnormal position as it had done before the treatment was begun.

In the second case reported the child had been noticed, shortly after a normal birth, to have some abnormality of the right hand, and when he began to walk, a "hip limp" was observed. In this case there was a well-marked spastic condition of the arm and leg with a displacement of the right hip, which was readily reduced. The acetabulum was only slightly developed. The mental condition of the child was normal. Here there was no history of an instrumental labor, or of premature birth, or of asphyxiation, yet the tonic contraction in the arm was greater than in the first case.

Dr. BENJAMIN LEE spoke of a case which he had seen for the first time about sixteen years before. Then there had been a spastic condition of the left arm, but, when he had seen the patient quite recently, he had found all the movements of the hip somewhat restricted. He considered the case essentially similar to the one just reported.

Dr. F. S. COOLIDGE, of Chicago, suggested that in Dr. Weigel's case the dislocation might have been produced by severe spastic contraction of the foot.

Dr. WEIGEL replied that this could not be the case, because there had been a spastic condition ever since the birth of the child.

The Ætiology of Deformity in Knee-joint Disease.

Dr. A. E. HENRY, of Chicago, then read a paper on this subject. The paper was an answer to a similar communication presented to the association at its last meeting by Dr. A. M. Phelps. The author of the present paper said that anatomy taught that the knee joint was not a simple hinge joint, as there was no common center around which the head of the tibia could revolve. As the condyles were of unequal lengths, there was a rotation of the tibia upon itself, thus greatly complicating the mechanics of this joint. The flexor and extensor muscles were equally balanced when the knee was fully extended, but as flexion progressed the flexor directed its power, because the tendon constantly changed its direction until, when it reached 135°, the flexor actually became an extensor. During this change of position the knee joint was subjected to a strain from an incli-

and a half to no leverage at all. His paper was founded on a series of observations made upon a number of medical students to determine the power of various muscles. When the leg was straight he had found that flexion was about seventy-five pounds, and that, when the person was lying upon the back with the legs flexed at right angles and the knee pressed against a block, the power of flexion was only about forty pounds, thus showing that the power of the flexors had diminished thirty or forty per cent. during the change from the straight position to flexion at 90°. The power of extension with the leg at 90° was about a hundred and seventy-five pounds. The strongest point of the flexors was weaker than the weakest point of the extensors, and between 90° and 130° there was no appreciable difference in the powers of the extensor muscles. It might therefore be said that the preponderance of power was in favor of the extensor muscles, and that it had nothing to do with the production of deformities of the limb. He did not think that there was anything in the clinical history to show that the extensor muscles atrophied any faster than the flexors.

Dr. W. E. WIRT, of Cleveland, gave a mathematical demonstration of the method of determining the amount of force of the muscles and the amount of friction.

Dr. WHITMAN said that he thought one important factor, that of the gastrocnemius muscle, had been left out of consideration.

The PRESIDENT said that he believed the propositions in the paper were entirely incorrect. He had himself obtained results which tallied very closely with those of Horton, of Dublin, and these results showed a force of about thirty-five where Dr. Hodley had estimated a force of about seventy-five pounds. His main criticism applied with equal force to the other figures presented in the paper. It should not be forgotten that when the leg was flexed the quadriceps muscle acted over a pulley, and its force was therefore diminished by friction. When the limb was straight there was no friction, but when it was flexed there was a force so great as to be sufficient under certain circumstances to produce a fracture of the patella. In his own experiments he had found that when the leg was perfectly straight the extensor muscles were at the greatest possible advantage, and that the amount of resistance was two hundred and forty pounds, as against one hundred and thirty-five pounds when the limb was flexed. The insertion of the muscles was such that they were acting on a lever represented by the distance of the attachment of the muscle to the center of the bone. As the limb was flexed, the lateral ligaments of the knee were relaxed and the capsular ligament stretched to one side of the end of the femur, thus producing an additional point to which force is brought to bear, and the distance from the center of the capsule to the point of attachment. This causes a further increase of the leverage. The point is, however, that he would draw from his studies on this subject that the typical deformity was produced by a constant effort to overcome the resistance of the articular process.

Dr. JOHN BROWN, of Cleveland, said that apparently no account had been taken as far as the time that as the knee approached the point of full contraction its power was diminished.

Dr. HODLEY replied that he had considered this point in his paper but had omitted it from his lecture. He did not think that friction played in the matter during the time the patient was lying on the ground. The experiments of Dr. Philadelphia had been made upon men who were between twenty and thirty years of age, and it is probable that the results would be similar to those obtained from the experiments of the present day.

Dr. J. H. BROWN, of Chicago, then made some remarks in

connection with the presentation of a pathological specimen from a case of Hoffa's operation for congenital dislocation of the hip. The object of the operation was to make a new acetabulum for the reception of the dislocated head of the femur, and Hoffa had maintained that as the acetabulum was the thickest portion of the bone there could be no danger of perforating the bone by freely curetting out a new acetabulum. This contention was, however, incorrect, as was well illustrated in the specimen he presented. The specimen also showed that he had not been able in this particular case to detect on palpation the existence of a well-developed acetabulum—in fact one that was better than the one he had made at the time of the operation. It would also be noticed that when the head of the bone was placed in the acetabulum the limb could not be straightened, apparently because of the resistance offered by the Bigelow Y-ligament. On this account the speaker suggested that the capsule be divided anteriorly. He thought that by thus modifying the operation the condition of congenital dislocation would prove to be a curable one.

Dr. BRADFORD then presented a specimen of rhachitic deformity of the hip occurring in an adult, and also a knee joint showing a periostitis above the head of the tibia.

Dr. WHITMAN said that the Lorenz operation was practically the same as the modified operation suggested by the last speaker. He approved of the operation and agreed with Dr. Bradford as to the obstacles ordinarily met with in the reduction of the deformity. He wished to emphasize especially one point which he thought was not fully appreciated, and that was that there was great disability and often pain or discomfort in cases of congenital dislocation of the hip.

Dr. WEIGEL said that his experience confirmed the remarks just made regarding the great degree of disability present in cases of double congenital dislocation of the hip, but he had found no special difficulty in his cases in reducing the deformity. He did not think the acetabulum was equally rudimentary in all cases, and therefore he thought that there were some examples of this condition which could be properly relieved by continued traction and without resort to operation.

Dr. DE FOREST WILLARD, of Philadelphia, said that it seemed to him that the specimen just presented was exceptional in that it did not show as great a degree of deformity of the acetabulum as was ordinarily present. Where there was a long, undeviated neck, however, he did not believe any operation was likely to prove successful. He had seen great disability in these cases, but never true pain.

Dr. BENJAMIN BROWN, of Buffalo, recalled the case of a child of three years in whom the use of continuous traction for a period of six months had resulted in keeping the head of the bone in its proper position, so that it could not be dislocated by the application of a reasonable amount of force. This case would show, however, that the acetabulum was not so undeveloped as the acetabulum was fairly developed, and that there was a fair prospect of cure from the treatment of the articular process.

Dr. WERT said that he had been asked if he had seen any case of the kind which showed that continuous traction would cure.

He answered that he had seen only one case of the kind, and that the leg, after treatment, had been found to be in a position that had been expected.

He thought that the only case of the kind which had been cured by mechanical means, he thought we should recall as part of the history of the case. He said that he had seen a case of the kind which had been cured by mechanical means, and that he would present a specimen of the kind which had been cured by mechanical means, and that he would present a specimen of the kind which had been cured by mechanical means.

Dr. BROWN said that he had seen a specimen of the kind which had been cured by mechanical means, and that he would present a specimen of the kind which had been cured by mechanical means.

methods of the numerous water-supply companies of English cities, supplemented by others on the continent of Europe, have afforded ample materials for reliable and extremely valuable inductions in this department of public hygiene.

There could be no more forcible illustration of the value of sand filtration than that afforded by the authors' comparison of the different experiences of the two cities, Hamburg and Altona, in the late cholera epidemic. Hamburg was supplied with water taken from the Elbe above the city, but not subjected to any purifying process. Altona, on the other hand, used the Elbe waters *below* Hamburg, infected with the sewage of that great and pest-ridden city. But the water used in Altona was passed through the modern sand filters. The result was in favor of Altona as ten to one and more.

Further points of great practical interest are that new filters are not so efficacious as those a few days old; that from this on for many weeks age does not seem to bring deterioration to these large filters until they become so clogged that pressure must be applied to cause the water to pass through with sufficient rapidity; and that the growth of a fine slime in the filters seems to be the main cause of the more thorough separation of microbic bodies. It is also of interest to find that garden soil, peat, and such fine earthy materials make the best of all separators; but, unfortunately, on account of the slowness of their action they do not seem as yet to be available.

We regret that the authors of this work had not seen the observations on the Brooklyn water supply published by Dr. Smith Ely Jelliffe in the *Brooklyn Medical Journal* last spring. Next to the labors of the Massachusetts State Board, Dr. Jelliffe's examinations are, we think, the most important yet made in America, and their completion is looked for with great interest.

BOOKS, ETC., RECEIVED.

A Treatise on the Principles and Practice of Medicine; designed for the Use of Practitioners and Students of Medicine. By Austin Flint, M. D., LL. D., Late Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, New York, etc. Seventh Edition, thoroughly revised by Frederick P. Henry, A. M., M. D., Professor of the Principles and Practice of Medicine in the Woman's Medical College of Pennsylvania. Philadelphia: Lea Brothers & Co., 1894. Pp. 15-19 to 1143. [Price, \$5.]

Aseptic Surgical Technique: with Especial Reference to Gynecological Operations, together with Notes on the Technique employed in Certain Supplementary Procedures. By Hunter Robb, M. D., Associate in Gynecology, Johns Hopkins University, etc. Illustrated. Philadelphia: J. B. Lippincott Company, 1894. Pp. vii+9 to 261. [Price, \$2.]

Myxedema, Cretinism, and the Goitres, with some of their Relations. By Edward T. Blake, M. D., M. R. C. S., Life Associate, Southern Institute, Great Britain, etc. Bristol: John Wright & Co., 1894. Pp. xi-13 to 89. [Price, 3s. 6d.]

The Fourth Edition of *Standard* compared with *Other Methods* from the H. K. Lewis Co., London, and Elsevier, Paris, of *Yeast*. By J. A. Twiss, M. D., Physician to the American Hospital for the Deaf, etc. Philadelphia: The American Association of the Deaf, etc. Philadelphia: J. B. Lippincott Company, 1894. Pp. 1-112.

The Treatment of Gonorrhea and its Sequelae. Excerpted from *Central International Encyclopedia of Medicine*, Vol. 1, 1894, by Dr. J. B. Lippincott, Philadelphia, 1894. Pp. 1-112.

The Treatment of Gonorrhea and its Sequelae. Excerpted from

Dr. J. B. Lippincott's *Encyclopedia of Medicine*, Vol. 1, 1894, by Dr. J. B. Lippincott, Philadelphia, 1894. Pp. 1-112.

A Treatise on Appendicitis. By George R. Fowler, M. D., Examiner in Surgery, Medical Examining Board of the Regents of the University of the State of New York, etc. Philadelphia: J. B. Lippincott Company, 1894. Pp. 1-112. [Price, \$2.]

Handbook of Obstetric Nursing. By Francis W. N. Haultain, M. D., F. R. C. P. Ed., and James Haig Ferguson, M. D., F. R. C. P. Ed., M. R. C. S. Eng. Second Edition, revised and enlarged. With Thirty-three Wood Engravings. Philadelphia: J. B. Lippincott Company, 1894. Pp. xiii-243. [Price, \$1.]

The Science of Vital Force. Its Plan, Division of Function, and Operative Methods in Health and Disease. An Involuntary Agency of Nature that can be Harnessed and Utilized. By W. R. Dunham, M. D. Boston: Darnell & Upham, 1894. Pp. 8-9 to 198.

Two Cases of Unclassified Infection. By W. F. Arnold, M. D., Passed Assistant Surgeon, U. S. N. [Reprinted from the *Occasional Medical Times*.]

Some Observations on Gonorrhœa in the Male. By W. F. Arnold, M. D., Passed Assistant Surgeon, U. S. N. [Reprinted from the *Southern Practitioner*.]

Asepsis in Minor Procedures. By Hunter Robb, M. D., Johns Hopkins University. [Reprinted from the *Maryland Medical Journal*.]

Notes on Gynecological Technique. By Hunter Robb, M. D., Johns Hopkins University. [Reprinted from the *New York Journal of Gynecology and Obstetrics*.]

Practical Application of the Principles of Sterilization. By Hunter Robb, M. D., Johns Hopkins University. [Reprinted from the *American Journal of Obstetrics*.]

An Operating Table. By Hunter Robb, M. D., Johns Hopkins University. [Reprinted from the *Johns Hopkins Hospital Bulletin*.]

Abdominal Surgery on the Battlefield. By N. Senn, M. D., Ph. D., etc. [Reprinted from the *St. Louis Clinician*.]

The Comparative Rarity of Pulmonary Tuberculosis in the Highlands of Pennsylvania and the Adjacent Counties of New York. By Guy Hinsdale, M. D., Philadelphia. [Reprinted from the *Medical News*.]

A Case of Male Hysteria characterized by Recurrent Attacks of Motor Aphasia and Lethargy: Apparent Cure by Hypnotism and Suggestion. By Theodore Diller, M. D., Pittsburgh, Pa. [Reprinted from the *International Medical Magazine*.]

The Non-operative Treatment of Brain Tumors. By Theodore Diller, M. D., Pittsburgh, Pa. [Reprinted from the *University Medical Magazine*.]

A Brief Commentary of the Case of Apparent Recovery in the Practice of Professor William H. Carmalt. Being a Report to the Committee on Medicine of the University of the Connecticut State Medical Society, 1893.

Manual Methods for the Relief of Deafness and the Improvement of Hearing. By Louis J. Lauterbach, M. D., Philadelphia.

The Treatment of Gonorrhea and its Sequelae. Excerpted from

Encyclopedia of Medicine, Vol. 1, 1894, by Dr. J. B. Lippincott, Philadelphia, 1894. Pp. 1-112.

The Treatment of Gonorrhea and its Sequelae. Excerpted from

Transactions of the Medical Society of the State of California, Session of 1894.

Dr. J. G. Thompson, of Chicago, Mo., advises the following plaster: Diachylon, theriacina, and extract of belladonna, equal parts. A strip of plaster, on the back of a plaster or an electrical cloth, from ten to twenty and twenty grains in size, lined and fifty, has a special action in cancerous gastralgia. Electricity, says the author, should be tried in nervous gastralgia above all. The catheter, current, should be employed, and continued until the patient is completely exhausted. A large positive current applied posteriorly to the tumor would be just as the opposite. It gives a constant and a few minutes of anti-spasmodic action, and is useful in the treatment of the tumor. At least half the size, should be placed on the left lumbar region, and the other half on the right lumbar region. The current should be continued until the patient is exhausted.

Should the physician go into society? Aside from his obligations to his family or to his friends, certain anniversaries and solemn occasions, such as a marriage among his friends, it is to his interest not to squander his time, but to remain in a sort of obscurity and to allow people to think that he is entirely absorbed by his occupations. The most fashionable physicians have the reputation of being unapproachable and nearly impossible to meet; for them, the result is a real prestige. It is to his advantage to appear rarely, and for a brief time only, in social circles, in beer gardens, and all places of social gathering. One is somewhat lost in large cities; there bachelors are numerous, and friends of the fashionable world supply the place of the family for those who have no family. In this case a certain latitude is warranted. But if the doctor were in the small pro-

noid growths, together with the adherent mucous membrane, from the cavities, and packed them all with aseptic gauze, which is to be removed if the patient wishes to sneeze. In the department of abdominal surgery the man was made the subject of a consultation by Dr. A., Dr. B., and Dr. C. Inasmuch as the history showed that the patient's mother had while living lost a set of false teeth, Dr. A., reasoning that tooth and nail are generally associated in action, is inclined to think the set may have been swallowed unconsciously and remained in the patient's stomach. Of course, he advises an operation. Dr. B., on the strength of Julius Cæsar's statement that "*Gallia est omnis divisa in partes tres*," suggests that one of them may have wandered down to the great toe, and advises an exploratory incision into the gall-bladder to ascertain if either part is missing. He further remarks that the "Gallic boot of love," cited by Dr. O. W. Holmes, seems to indicate a tendency of the gall to the foot. Dr. C. concurs in both these opinions, and on general principles he advises the removal of the appendix; but, inasmuch as the patient states that that has already been done, and that he has his appendix in a bottle at home, and is prepared to fetch it if required, it is deemed advisable to await further developments. The gynecologist reports that palpation reveals no abnormal condition of the uterus or its appendages, but, inasmuch as a medical student has called his attention to the facts that the patient wears trousers and has well-developed male generative organs, it is doubtful if the case is a proper one for his department. The gentleman in charge of the department of genito-urinary diseases reports that the organs are apparently healthy, but suggests that it is not impossible that the patient may have passed a vesical calculus which has fallen upon the great toe and injured it. The report of the neurologist completes the examination. That gentleman finds that there is deficient innervation of the man's lower limbs. In particular, there are two well-marked areas of impaired sensibility and partial anesthesia located in the gluteal regions beneath the tuberosities of the ischia. As the history sent with the man made no mention of this, the neurologist had questioned him as to how long the condition had existed, but had received only unsatisfactory replies—merely to the effect that he had "sat so long upon those d—d hard benches that his — got numb." He recommends a rubber cushion with two holes, and that the case be kept under observation. After all this the surgeon announces that he is about to send the patient to the chiropodist around the corner, with instructions to have the toe cleansed and a piece of sheet lead inserted under the roughened edge of the nail. Advising the gentlemen of the class not to lose the opportunity of witnessing this procedure, he bids them good morning.

Rhus Poisoning.—In the June number of the *China Medical Messenger* of London there is a note by Dr. James H. MacCartney on Dermatitis Venenata. He has in mind particularly the poisoning produced by the Chinese varnish *tschi*, as well, he says, it may be said to be caused by *Rhus toxicaria*. He has been able to give precise and accurate facts for the purpose of this paper, but they have to stand going to the trouble of searching out the Chinese drug, and some of the best specimens of the varnish, and then to have them analyzed, and to have the results published. He thinks he has pointed out the most susceptible persons, and that the Chinese and other dark-skinned persons are little if at all susceptible. It is seldom that the centers of the small body with fair skin become so thoroughly completely covered with it, are affected with poisoning, and those who have had an attack and escaped it seem that are more so than those who have not been so. The author strongly advises the use of oil of turpentine.

the symptoms have been the same and the treatment has been equally efficacious. The attack is always ushered in by severe headache, a rise of temperature, and intense itching and burning of the affected parts, generally accompanied with constipation and loss of appetite. Within a few hours the poisoned parts become inflamed and begin to swell. Different parts of the body may become infected by the patient's scratching them with his poisoned hands. All cases may be cut short by means of local treatment if it is employed early enough, when the itching is first noticed. A ten-per cent. solution of carbolic acid applied frequently at this time will abort an ordinary attack in six hours. All the internal medicine that is called for is a saline cathartic and something to control the fever and headache. The author adds that he has found a strong solution of acetate of lead [applied locally, we presume] very efficacious.

Apocynum Cannabinum in the Treatment of Diseases of the Heart.—The *Journal des praticiens* for August 14th contains an abstract of an article by Dr. J. Glinski, published in *Vratch*, from which it appears that the author has satisfied himself by experiments on animals that *Apocynum cannabinum* contains an active cardiac tonic. Moreover, being himself affected with hypertrophy of the left ventricle, with dilatation, a mitral murmur, etc., he took fifteen drops of the fluid extract daily in three doses. All the functional symptoms were ameliorated, and he made further trials in other cases of compensatory troubles, and obtained the same success. He concludes that the root of *Apocynum cannabinum* has properties similar to those of digitalis, and is free from the cumulative action of that drug. In cases of dilatation of the heart it diminishes the area of dullness, increases the secretion of urine, allays palpitation, and favors secretion. No secondary effects are observed after its administration further than an augmentation of the arterial pulsations. It may be used in decoction, tincture, or fluid extract. It is a drug, says the author, that ought to be studied anew with regard to its action on the heart.

The Treatment of Epithelioma with Pyoctanin.—In the *Revue internationale de médecine et de chirurgie pratiques* for August 10th there is an abstract of an article by M. Dujardin, published in the *Journal des sciences médicales de Lille* for June 16th, giving an account of a case of superficial ulcerative epithelioma situated on the eyelid near the inner angle of the eye. As the patient declined to have the affected part removed, the author resorted to cauterization with a one-to-twenty watery solution of Ueberk's blue pyoctanin, applied every second day. The treatment was kept up for several weeks without any apparent benefit, when the diseased part became affected with swelling accompanied with erysipelatous redness and sharp pains. Under the influence of emollient applications the inflammation gradually disappeared, and then it was found that the epithelioma had healed entirely.

The Students and the Tailors of Austria-Hungary.—The *Union médicale* states that the Tailors' Union of Gratz, in Styria, has addressed to the rector magnificus of the University a request that in future no student shall be accorded the diploma of doctor unless he can show evidence that he has paid his tailor entirely.

The Mississippi Valley Medical Association.—The twentieth annual meeting will be held in Hot Springs, Ark., on November 20th, 21st, 22nd, and 23rd. The secretary announces that many valuable papers have been promised.

A Statue of the Late Professor Claude Bernard is to be inaugurated in Lyons on the 26th of October, as we learn from the *Union médicale*.

Original Communications.

THE GASTROGRAPH:

A NEW MEANS OF
DETERMINING THE MECHANICAL ACTION OF THE STOMACH.*

By MAX EINHORN, M.D.

UNDER mechanical action of the stomach one understands the changes which substances there undergo by the existing motions of this organ.

At the end of the last century, when physiology began to develop, several theories of the physiological function of the stomach took their origin. The oldest of these theories and the one which enjoyed most recognition was that of trituration, the food in the stomach being broken into small particles and changed into chyme. In the stomach of birds—where glass beads experimentally introduced were found, as you all know, broken into small fragments—one saw the proof for the correctness of the mechanical theory. Even then, however, before the chemical qualities of the gastric juice were known, two other theories had been constructed—the fermentative and the chemical. The advocates of the fermentative theory explained the digestive act as a kind of decomposition of the food by a putrid-like process. The chemists, however, looked for the active principle in the saliva and in the gastric juice.

Haller† believed that the food only became softened and diluted by the gastric juice, the process of maceration being aided and accelerated by the warmth, the putrefactive principle, and the slight but continuous motions to which the aliments are subjected.

Réaumur and Spallanzani‡ endeavored to bring light upon this subject by a variety of ingenious experiments. They had animals swallow wooden capsules filled with food (meat), the capsules having several holes so as to admit the gastric juice into them. After a few hours the animals were killed, the stomach opened, and the capsules obtained; they were always found empty, i. e., the meat had been digested. This experiment unmistakably showed the important part of the gastric juice for digestion. The other theories seemed thus to be overthrown, and the chemical alone to be the right one.

The mechanical action of the stomach from that time on until the end of the last quarter of this century was considered of hardly any value.

But Magendie, describing the act of gastric digestion in the following way:

"The aliment remains in the stomach, presenting almost one hour before it undergoes any perceptible change, but when acted upon by mixing with the fluids which are constantly poured into this organ. *Traversing then from the*

ach œnatus uniformly detached, at last the pyloric portion contracts itself, through its whole extent, especially toward the point nearest to the cardiac portion, during which the aliments are forced back. From this time we find in the pyloric portion nothing but chyme mixed with a very small portion of aliment unchanged."

Johannes Müller* shares the same view, as can be seen from his following remarks:

"Only irritants applied directly to the stomach cause an immediate contraction. It is evident how mistaken those are who count much on the motions of the stomach for the dividing of the food into small particles. The peristaltic motions of the stomach I have never seen clearly. I therefore describe them after Magendie."

Richerand† emphasizes that the principal part of digestion is not performed in the stomach: "L'estomac a de tout temps été regardé comme le principal organe de la digestion; il n'y joue cependant qu'un rôle préparatoire et secondaire."

This author utilizes all the three theories in explaining the function of the stomach. He expresses himself as follows:‡

"The soft and peristaltic action of the muscular fibers of the stomach exercises a slight pressure on the alimentary substances and triturates them finely. At the same time the gastric fluids soften and macerate the aliments before dissolving them. One might say that the process of gastric digestion is at the same time *chemical, mechanical, and vital*. In this way the authors of the different theories of the gastric mechanism have been wrong only inasmuch as they attributed this latter to *one cause*—namely, the warmth, the putrefaction, the trituration, the maceration, the gastric juices—instead of explaining it as an *act of all these causes united*."

A new era in the physiology of gastric digestion begins with Beaumont.§ His classical experiments on the Canadian St. Martin with the gastric fistula, executed during a period of several years, have greatly advanced all those important questions referring to the function of the stomach and remained undisputed to date. Beaumont knew the chemical properties of the gastric juice and gave a detailed description, from his own observations made on the Canadian, of the motions of the stomach and of the food. To illustrate Beaumont's views, we cite the following sentences|| from his well-known book *Experimental Observations on the Gastric Juice*:

"That chymification is effected by the *solvent* action of the gastric juice, aided by the *motion* of the stomach, and the natural warmth of the system, and is limited only inasmuch as the food of any person who has had an opportunity to observe its effect on alimentary substances."

* Read before the Medical Society of the County of New York, May 26, 1856.

† *Recherches physiologiques sur la Digestion*, Paris.

‡ *Recherches physiologiques sur la Digestion*, Paris.

§ *Experimental Observations on the Gastric Juice*, London, 1822.

|| *Experimental Observations on the Gastric Juice*, London, 1822.

* *Journal de Médecine*, 1837, tome 1, page 100.

† *Recherches physiologiques sur la Digestion*, Paris, 1829.

‡ *Recherches physiologiques sur la Digestion*, Paris, 1829.

§ *Experimental Observations on the Gastric Juice*, London, 1822.

|| *Experimental Observations on the Gastric Juice*, London, 1822.

" . . . These motions not only produce a constant disturbance, or churning of the contents of this organ, but they compel them at the same time to revolve around the interior from point to point, and from one extremity to the other. In addition to these motions there is a constant agitation of the stomach produced by the respiratory muscles." Page 102: "While these revolutions of the contents of the stomach are progressing, the trituration or agitation is also going on. There is a perfect admixture of the whole ingesta."

The movements of the food, according to Beaumont, take place in the following way:

"The ordinary course and direction of the revolutions of the food are, first, after passing the cesophageal ring, from right to left, along the small arch, thence through the large curvature from left to right. The bolus as it enters the cardia turns to the left, passes the aperture, descends into the splenic extremity, and follows the great curvature toward the pyloric end. It then returns in the course of the smaller curvature, and makes its appearance again at the aperture in its descent into the great curvature to perform similar revolutions. These revolutions are completed in from one to three minutes.

. . . . The bulb of the thermometer, which has been frequently introduced during chymification, invariably indicates the same movement. They are slower at first than after chymification has considerably advanced."

W. Brinton* corroborated most of these facts by further experiments on animals and explained the admixture of the food in the stomach by the two existing different currents—one in the center, the other in the periphery of this organ.

Blondlot† takes the same view as Richerand, laying, however, more stress on the mechanical action of the stomach, as may be seen from the following extracts:

"The stomach, as a whole, has to fulfill a triple rôle: Firstly (the most essential), to secrete the chymifying fluids; secondly, to serve as a receptacle for food during their chymification; thirdly, to act dynamically—namely, to mix the food and to expel it in the state of chyme. . . .

"Finally, the last quality attributed to the stomach is that of exercising a mechanical action on the aliments by means of the peristaltic movement with which it is provided."

M. Schiff,‡ on the contrary, attributes very little importance to the motions of the stomach. He says:

"Formerly much importance was attributed to the mechanical phenomena of the gastric digestion. By means of them we explained the mastication and even the dissolution of the aliment, and constructed strange hypotheses relating to the mechanical forces of the stomach. One even expressed as follows the supposed 'compressive force' of the spiral folds of the stomach. Spallmann and Reaumur, however,

had already produced artificial digestions, and had proved by their experiments that the aliment need not be in immediate contact with the stomach wall in order to become liquefied and digested, . . . and we are entitled to say that, as a whole, in all mammals—including man—it is the gastric juice alone which performs the gastric digestion."

The later physiologists have occupied themselves but very little with the subject in question. In this way one finds in most text-books either the description given by Beaumont or Schiff's opinion.

Whereas the experiments referring to the mechanical action of the stomach were left on the shelf, numerous investigations had been made in regard to the removal of the contents from the stomach into the intestines. This point

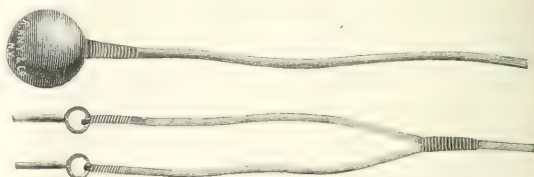


FIG. 1. The ball apparatus of the gastrograph. (Natural size.)

alone during the last twenty years took the foremost interest, the more so since one had learned to utilize it in pathological conditions. According to Leube,* the stomach normally is empty seven hours after a substantial meal. Wherever this is not the case one speaks of a "faulty motion" of the stomach. One became accustomed to use the term "motility" for the transportation of food from the stomach into the intestines, leaving the mechanical action of the stomach without any consideration whatever. The transportation faculty of the stomach considerably gained in importance, since it has been proved, by experiments made on dogs by Mering,† Moritz,‡ and Hirsch,§ that the absorption of liquids through the stomach wall hardly amounts to anything.

Kussmaul, the founder of modern stomach pathology, has written a very important paper touching our subject. His article on Peristaltic Restlessness of the Stomach forms a chapter of the pathology of the mechanical as well as of the transporting action of the stomach. We cite from Kussmaul|| the following sentences:

"The peristaltic motions of the stomach in man, as a rule, remain concealed. Only under favorable conditions, if the abdominal walls are very thin and the stomach either situated very low or dilated, they become visible. But even then not always. On the other hand, in some persons we see the peristaltic motion in a picture, which I designate as 'peristaltic restlessness.' Here the peristaltic action is remarkably lively; the mountain waves which move over the stomach are large and powerful. Rest appears only

* Leube: *Die Krankheiten des Magens und Darms*.

† Mering: *Monatsh. f. prakt. Med.*, Sept. 19, 1895, p. 721.

‡ Moritz: *Ibid.*

§ Hirsch: *Archiv. f. klin. Med.*, 1899, No. 18.

|| A. Kussmaul: *Vollständ. Systemat. d. Lehrsatz. d. Verdr.*, No. 181, June, 1889, p. 167.

* W. Brinton: *Gastrograph*, in *Proc. of the American Acad. of Med.*, Vol. 1, 1890, p. 100.

† Blondlot: *Ann. anat. et phys.*, 1890, p. 100.

‡ Schiff: *Principes de physiologie*, 1890, p. 100.

ever, as the platinum ball moves a little aside and does not touch the spike any more the current is broken. At each motion of the ball apparatus a rolling of the little platinum ball takes place and the electric current is either closed or broken. When the apparatus is at rest there is no change in the current. In connecting the "ticker" with the bat-

From numerous tests which I have made, it appears with certainty that the gastrograph works in the desired manner—*i. e.*, it indicates the motions of the ball and can thus be utilized for the valuation of the motions of the stomach or the mechanical action of this organ.

Method.—The ball is dipped in lukewarm water, introduced into the pharynx of the patient, and the latter told to swallow. The patient may drink some water. After a short while (from a minute to a minute and a half) the ball reaches the stomach. It is advisable to let the ball slip far down into the stomach, so that the distance from the mouth to the ball (length of cable) is about fifty centimetres. The cable is then connected with the battery and the indicator and the latter set agoing for three minutes (Fig. 3). The patient during this procedure sits quietly on a comfortable chair. At the end of three minutes the indicator is checked, the cable disconnected from the battery, and the ball withdrawn from the stomach. When at the introitus œsophagi, it is necessary, here in the same way as when using the bucket* or the deglutable electrode, to have the patient swallow, and to utilize the moment, when the larynx goes upward and forward, to withdraw the ball without using any force whatever.

The strip of paper which has rolled off from the reel is cut off and the marks are then perused. The black line shows when the current

was closed, each motion of the latter will be recorded on the paper by showing the "break" and "make" of the current.

If the ball is swallowed and brought into the stomach, the motions of it which are caused by the active and passive motions of the stomach, can be recorded in the same way as described.

This apparatus may therefore be designated as "Gastrograph" or, shorter, "Gastrograph."

The strip of paper which has rolled off from the reel is cut off and the marks are then perused. The black line shows when the current was closed, the empty places when there was no current. As an instance I give a few gastrograms (reduced ten times) (Fig. 4). For my experiments I have found it practical to enter the marks of the strips into a copy book. This was done in the following way: Each line was divided into three equal spaces, each space corresponding to one minute—each space (or minute) into ten divisions, and the "breaks" and "makes" of the current marked with dots at the corresponding place. In this way

* The position of the ball in the stomach is shown in Fig. 4, p. 325.

* Max Lundgren. *Med. Rev.* 1 Jul. 1890.

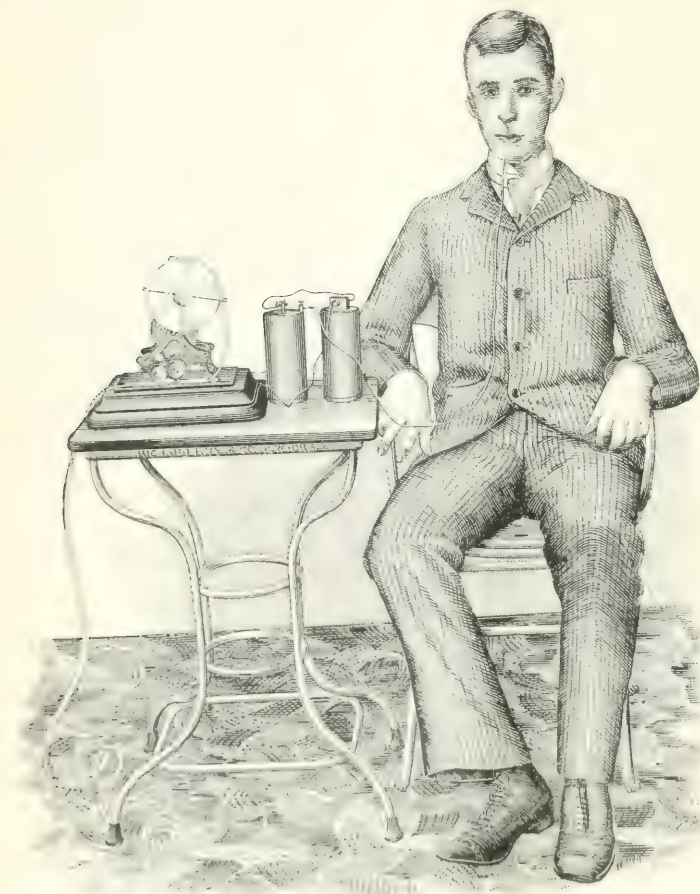


FIG. 3. A patient under examination with the gastrograph.

TABLE II (Continued).—GASTROGRAMS OF PATIENTS WITH STOMACH TROUBLES.

No.	Sex	Age	Disease	1.										2.						3 (minutes).	Number of days
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
109	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2 17 10.
110	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 0 0 0.
111	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2 0 3.
112	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4.1 4 9.
113	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3.8 3 11.
114	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11. 1. 1 16.
115	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16. 0 0 16.
116	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 2 0 2.
117	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10. 11 0 21.
118	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2. 0 0 0.
119	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 1 0 0.
120	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2 0 6.
121	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5. 1 2 11.
122	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 0 0 0.
123	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2 1 1.
124	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11. 0 0 30.
125	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1. 1 0 1.
126	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6. 2 1 15.
127	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 0 2 1.
128	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 5 0 11.
129	M	35	Chronic gastritis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 4 0 0 0.

1.—The figures in the parentheses show the number of days of food.

2.—Food is much better, and there is no further suggestion of food.

chanical function, the number of dots being reduced to 4, 3, or 0.

I might briefly state that in patient U. (xii, 15) with dilatation of the stomach and stenosis of the pylorus the number of dots was the largest.

Although these investigations are as yet not finished, they show, however, that the gastrograph will enable us to widen our knowledge of the mechanical function of the stomach. Moreover, it will probably prove of value as a new diagnostic means in some pathological conditions of this organ.

107 EAST SIXTY-FIFTH STREET.

A NEW AND DISTINGUISHING SIGN OF LATENT ANEURYSM OF THE AORTA.*

By WILLIAM C. GLASGOW, M. D.,

ST. LOUIS,

PROFESSOR OF PRACTICE OF MEDICINE AND
DISEASES OF THE CHEST AND LARYNGOLOGY, MISSOURI MEDICAL COLLEGE.

We occasionally find in practice cases of aneurysm of the aorta where the recognized signs of aneurysm are absent and where a positive diagnosis of the condition will be impossible. In most cases in the earlier stages there is an absence of dullness on percussion, pulsation, and aneurysmal bruit, and it is only later that the recognized signs are apparent. In certain cases the physical signs remain latent for an indefinite period, and it is only through the occurrence of the pressure symptoms that a suspicion of such a condition will arise. Even then there can be no positive diagnosis, as other thoracic tumors may produce the same disturbing symptoms. It will not be necessary in this association to dwell upon the importance of such a differential diagnosis and its bearing both upon prognosis and treatment.

In the study of a number of cases of thoracic aneurysm I believe that I have recognized a sign which will corroborate the diagnosis and which will enable us to give a positive opinion in all such cases.

The sign to which I make reference is the presence of a systolic sound or thud in the brachial artery, synchronous with the systole of the heart. This sound is sometimes accompanied by an arterial murmur. It may also be heard in connection with the aneurysmal impulse which has been conducted through the artery. When this sound can be heard and aortic regurgitation can be excluded, I think that a positive diagnosis of aneurysm can be made even in the absence of all other signs or symptoms.

I would explain this sign in the following manner:

Under normal conditions the artery is constantly filled with blood, and the walls are subject to a certain amount of tension, the pressure being greatest at the base of the aorta of the artery. The blood is being constantly forced onward, first, through the propelling force of the heart, and secondly, through the contractile power of the arterial walls. There is a steady pressure in the blood column, and

the artery is constantly filled with blood. If, however, a physical condition should exist which would allow a backward as well as a forward emptying of the artery during the arterial systole, the arterial walls would rapidly collapse and the artery would be found only partially filled at the time of the succeeding cardiac systole. When the column of blood is forced suddenly by the ventricular contraction through the artery with its relaxed walls, the walls of the artery are brought suddenly to a high degree of tension, and the sudden vibration of the walls in this condition produces the sound in the artery. This condition exists whenever there is a leak in the aortic valves, and whenever there is a limited dilatation in the aorta, if other conditions are normal.

Skoda, as early as 1869, drew attention to this brachial sound as one of the most significant signs of aortic regurgitation, and I would add that it is equally conclusive of aneurysm of the aorta.

In pure aortic regurgitation it is always present. In aortic regurgitation complicated with other valve lesions or a weakened condition of the heart it may be absent. In aortic obstruction and regurgitation the aorta is imperfectly filled, also where mitral insufficiency is present in conjunction with aortic regurgitation the amount of blood delivered by the left ventricle is insufficient to produce the arterial vibration. This is also true when the left ventricle has become enfeebled from any cause.

The same factors which are necessary to produce it in aortic regurgitation are equally necessary in aneurysm. A forcible ventricular contraction, a free and unobstructed flow of blood through the aorta are absolutely necessary for its production. In case of dilatation beyond the arch of the aorta I would explain the sign through the siphon action which would draw the blood from the brachial artery, produced by the flow of blood into the dilated portion of the aorta. The arm must also be extended to allow the free, unimpeded vibration of the brachial artery.

As the Corrigan or collapsing pulse is dependent upon the same physical conditions as those producing the arterial sound, it will be found coexistent with it; the sound, however, is at times evident when the character of this pulse is not well marked and when its collapsing quality can only be found by the sphygmograph.

In the course of an examination I will find the sound to disappear whenever the ventricular contraction has been weakened, but it will again reappear if the power of the heart can be strengthened.

I have called this a new sign of aortic aneurysm, for I can find no mention of it in the old English, French, or German literature, and no book written on arterial disease has mentioned it, nor have I ever observed it.

I report six cases of aneurysm in which this sign could be heard, and I might have added many more cases of subclavian aneurysm and those of some aneurysms. In these three cases the aneurysm existed in connection with aortic regurgitation, and there would not have been characteristic. In the case reported the aortic valves were healthy, so far as this can be said through physical examinations. In two cases the diagnosis of aneurysm

* Read before the American Climatological Society at its previous annual meeting.

rysm was made from this sign alone four months prior to the appearance of the recognized physical signs.

CASE I.—J. S., aged fifty-two years, a cattleman, complained in June, 1892, of a catching of the breath and a slight shortness on exertion. He referred his trouble to the upper sternum.

Examination.—Heart sounds were normal, percussion sound unchanged over chest. An accentuation of the heart sounds was heard over the second cartilage, extending to the left. There was harshness of the inspiratory sound in the upper sternal region and inner border of the infraclavicular region. There was no special pain in the chest. There was no pulsation. The pupils were normal and the radial pulses equal and free. A systolic sound like a strong heart sound was heard in both brachial arteries when the arm was extended and the ear applied to the artery. The diagnosis of aneurysm of the aorta was made. He was given iodide of potassium and a certain quietude of life was prescribed.

In November, 1893, the patient again presented himself. He complained of shortness of breath on exertion, with fugitive pains radiating from the sternum through the chest toward the suprascapular region. On examination a marked dullness was found over the upper sternum at the second cartilage, the dullness extending to the left; pulsation was evident in the dull area. On auscultation a marked inspiratory stridor was evident in the upper sternal and left infraclavicular regions. A loud systolic bruit was heard in these regions and behind. The heart sounds were normal. The pulse was unequal in the two arms; it was much weaker in the left radial. A systolic sound was heard over the right brachial artery.

February 24, 1894.—Patient came again; as he is living in the country he can not be seen often. The pains in the chest have been very severe at times. They come and go according to the degree of quietude. After a fatiguing exertion he stated that they were almost unbearable. The inspiratory stridor over the upper sternum is very great; this is also heard behind, in the interscapular region. The systolic murmur over the upper sternal and left infraclavicular regions is very loud; this is also heard behind. A marked pulsation exists under the second left cartilage, the space giving a dull percussion sound. The left radial pulse is much weaker than the right. A systolic sound in the right brachial artery. The heart sounds are normal.

I have not heard from the patient since that date.

CASE II.—Mrs. K. E., aged sixty years, complains of the abdominal aorta. A circumscribed pulsating tumor in upper third of abdominal aorta, with an upward and lateral expansion. A loud systolic murmur over tumor. A collapsing or Corrigan pulse. Systolic sound in both brachial arteries.

CASE III.—C. McC., aged forty-five years, first seen by Dr. Harrison, February 1, 1895. He complained of paroxysmal pain above the heart, extending through to the back. Over the second left interspace a slight pulsation was noticed, and a double murmur heard above the heart. In March, 1894, there was a large tumor above the heart, the size of an orange, and a pulsation freely with upward and lateral expansion. A systolic sound was heard, and the percussion sound is dull over the tumor. The heart sounds are clear and normal. The pulse shows the characteristic collapsing or Corrigan pulse. Over the lower sternal and infraclavicular space is heard.

CASE IV.—In April, 1894, J. B., a coal-miner, twenty-one years of age, called upon me on account of a persistent cough and difficulty of the breath. A loud systolic sound was heard in the right radial artery. The upper sternal and left infraclavicular regions were dull on percussion. A marked pulsation was felt over the second left cartilage, the space giving a dull percussion sound. The left radial pulse is much weaker than the right. A systolic sound in the right brachial artery. The heart sounds are normal.

some pressure on the recurrent laryngeal nerve by a thoracic growth, an examination of the chest was made. Nothing abnormal could be heard, except the unusual conduction of the two heart sounds to the upper sternal region. The percussion sound was resonant. Normal vesicular breathing was heard everywhere. The heart sounds were normal and clear. In the brachial arteries a systolic sound was heard. The pulse was full, and slightly collapsing. The diagnosis of aortic aneurysm, with pressure on the recurrent laryngeal nerve, was made.

A week later, I was hastily summoned, and found the patient expectorating large mouthfuls of blood. This continued some hours, and a persistent paroxysmal cough came on, which continued day and night. Soon afterward he began to complain of a pain over the middle sternum. He described this as a dull, heavy feeling, and sought to relieve it by keeping the clothes raised from his chest. He soon began to complain of a lacerating pain extending from the sternum to the back. These pains, and the cough, continued with decided intermissions through the month of May. He obtained a certain amount of relief through the use of iodide of potassium, phenacetine, and salol.

In the latter part of May he was examined by two of the leading physicians of St. Louis, Dr. P. G. Robinson and Dr. H. Tuholske. The only abnormal signs at this time were the signs of a pressure on the left bronchus and in the adjacent portion of the lung. The diagnosis made by these physicians was "a thoracic tumor, probably aneurysmal." This condition continued during July, and he suffered, with slight intermissions, the most agonizing pains. These would radiate at different times in different directions. In the beginning of August, for the first time, a deep-seated pulsation became apparent over the second rib in the left infraclavicular space. A systolic murmur developed in the same place; this could also be heard over the left scapula. Over the heart the sounds continued normal. The brachial arterial sound continued through the whole illness, with periods of intermission, when the heart became weak. It returned, however, after the heart had been strengthened by digitalis. It disappeared entirely during the last days of his illness. He died in the first days of September, from exhaustion.

CASE V.—P. R. entered the City Hospital complaining of violent attacks of pain over the region of the heart. These occurred most frequently during the night, and would last, unless relieved, for one or two hours. He also complained of a partial loss of voice.

Examination showed a double murmur over the sternum. This was also heard over the left infraclavicular space and in the left interscapular space. This murmur extended downward toward the heart. The percussion sound was duller over the third cartilage in a limited area. The left ventricle was not enlarged. The pulse in the left radial and the left carotid was much weaker than the right. Systolic sound and murmur in the right brachial; it was not heard in the left. A laryngoscopic examination showed a paralysis of the left vocal cord.

CASE VI.—On July 9th I was called in consultation by Dr. Willis Hall to see L. O., a chimney-maker, aged thirty years. It was stated that until July 1st he had steadily pursued his trade, but at that time had been compelled to give it up owing to alarming attacks of shortness of breath.

He had suffered with repeated attacks of spasm of the glottis. When I saw him the respiration was accompanied by a marked stridor, which was evidently due to an obstruction in the lower portion of the trachea.

An examination of the chest showed a dull area on percussion over the upper part of the sternum at the second costal

cartilage. The dullness extended slightly to the left of the sternum. There was no noticeable pulsation. A systolic murmur was heard over the dull area. This could also be heard behind between the scapulae. Over the sternum, between the second and fourth cartilages, a double murmur could be heard. These murmurs covered the sounds of the aortic valves. The apex beat was slightly lowered.

Over the lungs the respiratory murmur was weakened and greatly obscured by a loud, stridulous rhonchus which was heard with the greatest intensity between the scapulae and over the upper part of the sternum.

The pupils were normal. The left pulse was slightly less in volume than the right. Over both brachial arteries a distinct systolic sound could be heard.

An examination with the laryngoscope showed slight paresis of the left vocal cord.

The dyspnea steadily increased and became continuous and the man died three days later.

A post-mortem examination, made by Dr. Elsworth Smith, revealed a globular aneurysm the size of an orange situated in the upper part of the ascending aorta at its junction with the transverse. The anterior wall was greatly thickened by fibrin, being a quarter of an inch in thickness, while the posterior wall was thin, bulging backward, and compressing the trachea at the bifurcation. There was a slight hypertrophy of the left ventricle with some roughness of the aortic valves, but they seemed to be patent.

SOME THERAPEUTIC NOTES ON THE TREATMENT OF SUPPURATION, TUBERCULOSIS,

LA GRIPPE, SARCOMA, AND CANCER.

By J. S. WIGHT, M.D.,

PROFESSOR OF OPERATIVE AND CLINICAL SURGERY
AT THE LONG ISLAND COLLEGE HOSPITAL, BROOKLYN, N. Y.

DURING the past winter I have had some opportunities to observe the effects of certain remedies in the treatment of diseases caused by micro-organisms. It is my object to make some notes on the action of these remedies, which will be mentioned below.

It has seemed, too, that the past season has been one in which the pathogenic micro-organisms have been unusually active. Attention may be called to suppuration, tuberculosis, la grippe, cancer, and sarcoma. Both private and hospital practice have given large opportunity for observation.

In regard to disease and some of the therapeutic observations will be recorded. While others try to find the cause of these diseases, my object is to try to find a cure for them. Because disease in general may be fatal to be removed but not something to make a cure.

I have seen a large number of cases of suppuration, cancer, and disease. I have used the following remedies: Carbolic acid, boric acid, creosote, and bromide of gold and arsenic (Dr. Barclay's solution, "arsenicum"). The carbolic acid is in the form of preparation. I have used for some years as an antiseptic to suppuration, and it is very high for this purpose. The dose is from five to twenty grains. It may be given in water or alcohol. I generally use the latter. The remedy is of great value in the treatment of cancer and sarcoma.

In a number of cases of empyema thoracis I have used creosote in solution to irrigate the pleural cavity. Two openings are made into the cavity, and a perforated drainage-tube is drawn through them; this tube makes it easy and convenient to irrigate the pleura. In cases of exsection of the ribs irrigation has been made. The fluid has been limewater, either full strength or more or less diluted, containing from one to two drachms of beechwood creosote to the quart of limewater. The solution has been used twice daily at the normal temperature of the body. I am able to say that this treatment is very excellent, and has greatly diminished the period of convalescence of the patient suffering from empyema.

A married woman, about forty years of age, had suffered from extensive suppuration of the right knee joint. She had been in bed for nearly a year, and the pus had been let out from time to time. She was then admitted to the hospital in a very feeble condition. The openings and sinuses were irrigated with a mercuric chloride solution (about 1 to 5,000) twice a day. She was given five drops of Barclay's solution of bromide of gold and arsenic after each meal. In four or five weeks the dose was doubled. The improvement was slow, but in about two months she was so far recovered that she went home to take care of her family. While in the hospital she had small collections of pus form in various parts of the body; the abscesses were opened wherever they could be reached. The irrigation of the diseased knee aided in the recovery. But I have no doubt as to the value of the solution of the bromide of gold and arsenic as a curative agent. It probably acts as a germicide. The use of this remedy in other cases of suppuration tended to confirm this view.

In regard to the forms of tuberculosis which are likely to come under the care of the surgeon, I will make note of three remedies: Creosote, alcohol, and bromide of gold and arsenic. Creosote was given in doses of from half a minim to two minims after meals. No large doses were given. This remedy was given in limewater and syrup of Tolu and a bitter tonic. From considerable clinical observation, I have no doubt of the great value of creosote in the treatment of surgical tuberculosis.

In cases of tuberculosis of the joints I have applied alcohol locally with much advantage. A flannel roller bandage is put around the joint and then saturated with warm alcohol, the dressing being covered with oil silk. The persistent use of alcohol has enabled me to restore the knee joint in cases that have usually gone on so that exsection has been required. I have now under treatment a tuberculous hand in which suppuration occurred over the back of the metacarpus; by the persistent use of alcohol the function of the hand is slowly returning.

In a number of cases of surgical tuberculosis, some of which there has been general infection, I have seen much improvement follow the use of the solution of the bromide of gold and arsenic. In one case of malum osseum in the hip, from which I had not considered any, the remedy brought about steady improvement when other remedies failed. In the case the infection was removed. The bromide of gold and arsenic was continued from time to time, as a means of an antiseptic, when the disease would begin to recur rapidly. I have much experience

show that this remedy is of value in the treatment of general tuberculosis.

The tendency of modern therapeutics is to find remedies that will do little or no harm to the differentiated cells of the body. How far success in this direction has been obtained, in so far as *la grippe* is concerned, it is not yet possible to say. The notes which follow under this head are derived from personal experience, as well as from considerable observation. Let me briefly note the following remedies: Alcohol, phenacetine, acetanilide, citrate of caffeine, morphine, chloride of gold and sodium, and creosote. Alcohol in small doses, to relieve pain and support the strength, may be given every few hours. Phenacetine and acetanilide appear to diminish the pain of *la grippe*, and are most useful in about five-grain doses. The following prescription has been useful:

R Acetanilide..... gr. ij;
Camphor. monobrom..... gr. ss.;
Caffeine citrate..... gr. ss.

M. Ft. pil. No. 1.

S.: Take one every three or four hours.

A cup of hot tea in which has been mixed one or two teaspoonfuls of malted milk will often give much relief. A small dose of morphine, say a sixteenth of a grain, will often make the gripe pains more bearable. A very excellent remedy for the broken-down condition of the nervous system which sometimes follows the toxic influence of the gripe poison is the chloride of gold and sodium. I have prescribed it in the following form:

R Auri et sodii chlor..... gr. ij;
Aque menth. pip..... f ʒ x;
Tr. cinchon. comp..... f ʒ xx.

M. S.: Take a teaspoonful in water after each meal.

One of the best remedies I have found for *la grippe* is creosote, given in doses of from one to two drops. I give creosote in limewater and syrup of Tolu, as a rule. Creosote will generally relieve the distressing nausea that sometimes accompanies *la grippe*. It has sometimes caused quiet and refreshing sleep when other remedies have failed.

At previous times I have noted the use of bromide of arsenic in the treatment of cancer and sarcoma, and I have no reason to change the views heretofore expressed on this point. In the treatment of these grave diseases I have also used the chloride of gold and sodium. I have found the use of these two remedies valuable in combination, giving them in alternate days.

I have more recently given the solution of the bromide of gold and arsenic in patients suffering from cancer and sarcoma. I have not yet had a sufficient number of cases with certainty as to the value of these remedies, yet I am convinced that they will turn out to be remedial in the true sense of the word. I have found, in a few instances, the absorption of the neoplasm has been brought about in a few weeks. It seems to me to be probable that the solution of gold and arsenic will prove to be almost infallibly curative in the treatment of carcinoma and the few residual forms of cancer.

Recently I treated the right mamma of a female patient with cancer of the right half of the breast. In applying the solution

hemorrhage. This patient had been improved by taking the bromide of arsenic. The effect of the ligation was to make a very marked decrease in the size of the growth, the condition of the patient being much improved for the time.

In a few cases I have used as a local application pure benzene, brushing it over the cancer and the circumjacent tissues. The best opinion I can form at present in regard to this remedy is, that it has done much good in certain instances of epithelioma, perhaps bringing about a cure.

A CLINICAL CONTRIBUTION TO THE STUDY OF THE ETIOLOGY OF ENDEMIC CEREBRO-SPINAL MENINGITIS.*

By JOHN FRANCIS BURNS, M.D.,

VISITING SURGEON TO ST. JOHN'S HOSPITAL, LONG ISLAND CITY, N. Y.

In Keating's *Cyclopædia of the Diseases of Children* may be found an able article on Cerebro-spinal Meningitis by Professor J. Lewis Smith. To students of disease, especially to those with a love for diagnosis, the article will always stand as a monument to its author's remarkable keenness of observation and scientific intelligence. With such an article for our benefit and guidance it would seem almost vain to offer anything further on the subject, but I am led to do so after reading the following passages in his work—i. e.: "The numerous monographs on this disease (cerebro-spinal meningitis) which have appeared during the last few years relate to its epidemic form, and no published observations, so far as I am aware, describe the character or symptoms which it presents when it occurs as an endemic or naturalized disease." He also adds: "The endemic disease must, of course, be observed in the cities or populous towns, for there is no rural locality, as far as I am aware, in which the disease is permanently established." Personally, I would also like to add my convictions as to the etiology of this sickness, believing that in this portion of its study will be found the true secret of its treatment. My experience here dates over two years in a scattered, mixed country-town district, and embraces sixteen positive cases, eleven of whom recovered perfectly and five of whom died. It is more than likely that I have had more cases of this illness both on my recovered and death lists than these figures show, as the certainty of diagnosis is often difficult where recovery takes place quickly or life is ended abruptly.

I will briefly relate the most important cases in my practice.

Case I.—I had practiced here but a short time when I was called to see the child of a Jewish butcher, aged five years, who had been taken suddenly ill. I found the child with a heightened temperature, some retraction of the head, projectile and persistent vomiting. I diagnosed cerebro-spinal meningitis and so informed the parents. They doubted my diagnosis, but the child passed through a typical though somewhat mild form of the disease. After two weeks' treatment it was seemingly well, except that the temperature remained constantly at 102°.

* Read before the Medical Society of the County of Queens, N. Y., at the annual meeting, held at Midsouth, May 29, 1894.

typical eruption or decided nuchal symptoms added greatly to my perplexity of mind, which would have continued to this time but for what followed. About the second week of the child's illness an elder sister, aged fifteen years, who had previously been perfectly well, was taken suddenly ill, complaining of severe headache, which passed quickly into active delirium. This young woman passed through a typical attack of cerebro-spinal meningitis, in which the usual symptoms were all markedly characteristic. Especially so was the excessive hyperæsthesia so peculiar to this sickness; in addition, the case presented a novel feature, the face of the patient assuming and retaining even into convalescence the so-called *risus sardonicus*, with rigidity of the jaw and difficulty in swallowing. Thus what had been to me a somewhat doubtful case in the younger had an almost positive corroboration in that of the elder.

The child first taken ill subsequently developed pressure symptoms and the character of the delirium more clearly approximated to that found in cerebro-spinal meningitis, although in other respects the symptoms were not so positive. Her life, however, always hung in the balance, and she only recovered after many months of care. The elder sister never had such grave symptoms, but recovered after a so-called "relapse" in which the original symptoms were modified and shortened. This family consisted of ten members, seven children (eighteen months to eighteen years) and three adults (women). Coincident with the "relapse" in the second of the former cases a younger sister, aged eight years, was taken ill with symptoms which, after careful analysis and watching on my part, I diagnosticated typhoid fever, and she passed safely through a mild attack of the illness. A younger brother, aged six years, was quite ill at the same time with what I was forced to diagnosticate continued malarial fever (typho-malarial of many authors). Although not as sick as the other children, still I had at times fears as to his ultimate recovery. Still another brother had bad attacks of intermittent fever during all this time, as did the youngest child, a baby. These with treatment continued about the house. The only two in the family who did not complain of actual and decided manifestation of miasmatic contagious infection of some sort was the mother, who had narrowly escaped with her life the year previous from typhoid (her husband perishing at that time from the same sickness), and the eldest daughter. Thus far the cases were remarkable enough, but during this period a cousin of the children, a vigorous young man of twenty-four years, who lived two streets distant and who was in the habit of "dropping in" to learn the condition of his cousins, staggered into my office one evening manifesting very decided symptoms of typhoid fever. I told him to go home and to bed. His mother living in New York, he immediately proceeded there, coming under the care of Dr. Wallace and Dr. Loomis. He died after a short illness with pneumonic complications. The grandchild of these children, and six or five years, an exceptionally vigorous and healthy woman for her time of life, died about one month after under no care, seven days with typhoid. She had been in the habit of calling to see these children every day, and lived about four streets away. During all this time I had seen but one other case of typhoid, cerebro-spinal, or typho-malarial fever in the neighborhood. It being pretty thickly populated, and having a large practice there, in I was a good time past, and from the street. I made careful and repeated examinations of the family, and of all the persons, and their immediate surroundings, and could not find out cause for complaint. In the century, the persons were quite common. The miasmatic agents, however, were in a thoroughly sanitary condition, and I learned the local health board on my part of a general attack of miasmatic contagious disease, but it seemed as if my case were not to be localized in the health of the

neighborhood was very good, when I was compelled to go away for a few weeks, owing to overwork. The same locality upon my return, however, became the seat of a most violent and persistent endemic of fevers in which many persons lost their lives. The children ultimately recovered and are now in prime health.

It is extremely difficult for even one who passed through all these scenes to derive illustrations from the study of the conditions which presented, but I will mention several which appeal to me, and which I think will be further borne out by cases to be cited.

1. That it is exceedingly hard at times to draw a distinct line between certain forms of typhoid and cerebro-spinal fever, even if one has a large experience in both. I may say the same for typhus, although those who have not had the experience will deny this. There is certainly more than a passing connection between them all.

2. That it does not follow that these persons caught the sickness one from the other, nor that their various sicknesses were different save in name.

3. That the conclusion as to the proper name to be applied to such sicknesses does not depend on any particular symptom or symptoms so much as on a comparison of the symptoms presenting one with the other, and with such other seemingly analogous cases as may have come under the observation of the practitioner. The judgment of the observer is apt to be right in doubtful cases carefully studied by one with experience, his own fears to the contrary notwithstanding.

4. I should like to call the attention of the medical profession to the fact that the young lady of fifteen years had the condition known as *risus sardonicus*. Taken in connection with the baby mentioned in Case I it will bear profound study. I have seen other cases in which this condition was noticeable, but never to the extent manifested by this girl.

CASE V.—I was called to see a patient, aged thirty-eight years, female, Bohemian, who had been ill two weeks. This case presented about one month after the convalescence of the two last cases and was some two streets removed. Four other members of the family I found to be sleeping in the same room with the sick woman. I warned the family of the danger entailed by such proceedings. The patient had typhoid fever and died in twenty-four hours, being in collapse when I called. After one week I was called to see the deceased woman's child, aged six years, who was ill with what I was forced to diagnosticate continued malarial fever (typho-malarial). A second child, aged eight years, developed after another two weeks as true a case of typhoid fever as is ever found. Both these recovered, and I was congratulating myself upon the end of the trouble in the family when I was called to see the eldest boy, aged eighteen years, who had been sick for five days and who for some unaccountable reason had been allowed to go without my being sent for. I found the boy with a most typical case of cerebro-spinal meningitis and he died in forty-eight hours.

I introduce these cases simply to show the repeated number of times in which certain forms of miasmatic contagious diseases occurred in my practice in connection with cerebro-spinal meningitis. It would seem to me that different persons have a different susceptibility to the causative agent responsible for the disease, and that the mani-

festations vary with the nervous susceptibility of the individual.

CASE VI.—I was called to see a boy, aged fourteen years, who had been ill some fifteen days. His mother had been treating him with home remedies, but on account of his having gradually grown worse I was sent for. After careful examination I diagnosed typhoid fever. Later examination and observation confirmed this, and I was able from the mother's statements and the condition of the boy to predict the time at which the fever would leave him. This boy was very sick, but I held out a hopeful prognosis and after five weeks' typical illness his temperature reached the normal, with improvement in all his symptoms. His temperature remained normal for about six days and I thought convalescence assured when he was suddenly taken violently ill with all the symptoms of cerebro-spinal meningitis. This boy passed through a typical attack of the same, extending over four months, five months from the beginning of his illness. He was unconscious for weeks and given over for dead many times. He developed most extensive bedsores which exposed the bones despite the best of care. He also had an extensive inflammatory condition of all his joints, ending in destruction of the hip joint, and I feared for the others as well. The house in which the boy lived was sold over his head during the illness, and at the end of seven months I had to have him removed in an ambulance. In addition to the disorganization of his hip joint the right side was paralyzed, but this yielded totally to treatment, and only for the necessity of using a lift on his right foot the boy is as healthy a one as I know to-day. During this boy's illness, his brother, aged twelve years, had typhoid fever, yet another brother continued malarial fever (typho-malarial), and I was obliged to send a younger sister, aged four years, "out on the island" as I could not force a low fever to leave her body. All finally recovered.

This case again illustrates the peculiar relationship which at times exists between miasmatic contagious diseases. It also illustrates the fact of typhoid being followed by cerebro-spinal fever. I have also seen this condition, as I believe, reversed—that is, the typhoid following cerebro-spinal meningitis. It also illustrates how far these cases may go and yet all the faculties eventually be restored. I would recommend to all who can afford it, especially when the surroundings are bad (and it is to be remembered that a source of infection may be far removed from the premises), that any other children in the family who may be of a nervous temperament or in delicate health be removed to a distance. I think that if the patient could also be removed safely from the locality in which the disease has been contracted, the chance of recovery would be increased and the liability to relapse lessened. This boy presented the separate rashes common to his sickness in their respective order—the typhoid rash in typhoid, and the spotted and petechial in cerebro-spinal meningitis. I have met at least nine different eruptions in this sickness; some cases present them all at different times, others present very few. The character of the eruptions is fugitive in one protracted case, and, in protracted cases are the only ones in which we can seemingly make (judicial) observations, they are apt to escape our notice when frequently sought for. I have seen three forms of what to me might be called "spotted eruption": 1. Which

the size of twenty-five-cent silver pieces and not numerous when present. 2. Spots the size of the old-fashioned three-cent silver pieces, more numerous than the former. These are of a bright-red color and the second remind me of the typhus eruption, only larger. 3. A purplish eruption, the various spots very numerous and close together, resembling somewhat both measles and purpura hemorrhagica. The latter I have considered the eruption which has given rise to the name "spotted fever," but I am ignorant as to whether I have judged correctly. I will repeat that I have seen these same eruptions in numerous other patients in the same neighborhoods where I have been treating dangerous cases of cerebro-spinal fever, and I must confess that although the former did not have cerebro spinal fever, I could see no difference in the eruption. This has been quite common in my experience. I have also noticed: 4. An eruption, a cross between hectic and scarlatina anginosa, usually the size of the palm of the hand. 5. An eruption (petechial) very much like that seen in ulcerative endocarditis. 6. Numerous miliary and papular exanthems. 7. Taches cérébrales. 8. A marbling of the skin (coming and going). I have also in certain cases been unable to see any practical difference between the eruptions found in typhoid fever and cerebro-spinal meningitis, although the case might be a typical one of the latter. I have given these general observations on rashes, but, realizing the importance placed upon these eruptions by students of this disease, I shall in the future make a more exact and scientific study of the same. I mention them also more particularly as they tend to show that it is the same fever described by Professor Smith, of New York, in 1870, that is now endemicized in Long Island City and no doubt in other portions of the island.

CASES VII and VIII.—I was called to see a child, aged five months, who had been ill three days. It presented all the evidence of fulminating cerebro-spinal meningitis. I predicted its early death, and it did die the same day. About two weeks after I was called to the next house in which the aunt of the former child resided. Her child (also aged five months) presented many of the symptoms of cerebro-spinal meningitis, but by prompt treatment the case resolved itself into a milder type, and the child eventually recovered after about one month's illness.

I have had numerous other cases in which I honestly believe I have been able to modify what certainly were cases of cerebro-spinal meningitis, but I have not included them in my list of proved cases. A certain number of cases of cerebro-spinal meningitis exhibit prodromal symptoms, and I believe that in such cases, if recognized early, the sickness may be modified in its intensity and its course. It certainly has happened so in my practice. Physicians must always be on their guard for such cases in which the spinal column is the early pronounced source of trouble; these physicians must see with a patient before the diagnosis is made, and then quickly seize the chance through the attention being called to the spinal arching.

CASE IX.—I had been treating a dangerous febrile case, and forty-five years old, about two weeks for intermittent

Except for a tendency to laugh very readily, if such is a symptom at all, with credulity and emotional excitability, the psychic disturbances noted by P. Marie,* of Paris, as being characteristic are not noticeable. In fact, in the six or eight cases I have observed, psychic disturbances were exceptional. The French, though a brave and courteous people, are exceedingly emotional as well as credulous, and their mental equilibrium is more readily disturbed. This must account for Marie's observations.

Placing the disease under discussion in its proper place as a primary systematic lesion, which means, to borrow the expression of Vulpian, the lesions which settle in and circumscribe certain well-defined regions without encroaching on neighboring ones, "there yet exist a considerable number of pathological states, evidently situated in the nervous system, which leave no material appreciable trace on the cadaver, or revealed there at most by the minutest lesions without determinate character, incapable in any case to explain the principal facts in the morbid drama."† Tetanus, hydrophobia, true epilepsy, paralysis agitans, inveterate hysteria, and chorea, "the antique group of neuroses" though studied with success on several points, are still practically inaccessible to the anatomico-pathologist and exhibit themselves as so many sphinxes which defy the most penetrating anatomy.

It is a well-ascertained fact that the form of trouble under discussion is a secondary descending degeneration of either cerebral or spinal origin. If of cerebral origin, the lesion or foci must be in the Rolandic area, or, to be more exact, according to Flechsig, and more recently Charcot, the posterior segment—lenticulo-optic—of the capsule divides this segment into three parts, and the anterior two thirds could not sustain a destructive lesion, even of small extent, without being followed by a descending degeneration of the corresponding pyramidal fasciculus, since the nervous fibers which traverse it seem to be a direct emanation from the pyramidal fasciculi. A destructive lesion in the cord at the point of these white fasciculi would also produce a degeneration.

In either case the lesion must be a destructive one, and the degeneration a descending one, since the pyramidal fasciculi are incapable of an ascending degeneration, just as the axons of Goll or Burdach are incapable of a descending degeneration.

It is scarcely necessary to call to mind the fact that degenerations either ascending or descending do not exist unless the destructive lesion attacks the white fasciculi.

In order to account for a variety of clinical phenomena in connection with the four pyramidal fasciculi it is well to bear in mind the observations of Flechsig and Pierret, and these are: Regarding the nondissociation, dissociated generally as dissociation of the pyramids, each pyramid gives origin to two spinal fasciculi, the one crossed, the other direct, but that this interesting subject is not yet so well known.

Thus Flechsig places these groups in types: 1. The

the most common and consists in a symmetrical semi-decussation, each pyramid furnishing a crossed and a direct fasciculus. Seventy-five per cent. are of this type, the crossed being of the most importance and ordinarily represented by ninety-one per cent. of fibers of pyramid. Pierret has made observations reversing this proportion and making a variety of the same type; in this the direct fasciculus is represented by ninety per cent., the crossed by ten per cent. of all fibers; the intercrossed are here hardly worth taking into account. A cerebral lesion here would give paralysis on the same side of the body as the lesion, contrary to the rule.

The second type has been observed in eleven per cent. (11 in 100); it is the total decussation. The direct fasciculi fail completely.

The third or asymmetric type has been observed in the proportion of forty per cent. In this case there exist only three fasciculi—one pyramidal dividing into two, a direct and crossed, the second pyramid being intercrossed *in toto*.

The termination of this pyramidal fasciculi also interests us. The pyramidal fasciculus grows smaller gradually as it descends toward the filum terminale. This fact proves that its fibers gradually disappear in the descending course of the fasciculus through the different spinal regions. Flechsig and Charcot both assert that the termination of the nervous fibers which appear to be a direct emanation from the constituent fibers of pyramidal fasciculi is not in the anterior roots, because, while the anterior cells and anterior roots are already greatly advanced in development, the pyramidal fasciculus is barely traced (*The Anatomy of the Cord in the Newborn*), there can therefore be no continuity.

But the opinion of the majority of writers is that a connection does exist between the terminal extremities of the pyramidal fibers and the multipolar motor cells. It is also possible that some of the fibers are prolonged into the commissure and thus reach the opposite side of the cord.

The causes of amyotrophic lateral sclerosis are somewhat obscure. That the disease may be caused by injuries we see in the case just related. It is probable that anything that will cause spastic spinal paralysis may also cause this. I have not observed any cases of this trouble caused by poisoning, though I have reported several cases of atrophic paralysis of spinal origin caused by arsenical poisoning* in the adult; traumatic influences, exposure to cold and wet no doubt exercise a causative influence in this as in other cord lesions.

In the diagnosis much may be gained by exclusion as well as by distinction, if duly impressed with the negative symptoms—viz., the absence of sensory disturbances, impairment of bladder efficiency, and bedsores.

The positive symptoms are at first confined to upper extremities. The rigidity of limbs, increase of all muscular reflexes, with a true motor paresis, is more characteristic of the disease first described by Seguin in 1873, and later by Erb, as "a peculiar paraplegiform affection." Lateral sclerosis, in fact, the amyotrophic form, is only a

* *Transactions, American Association of Medical Surgeons*, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 2960, 2961, 2962, 2963, 2964, 2965, 2966, 2967, 2968, 2969, 2970, 2971, 2972, 2973, 2974, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626,

variety or type of the same disease, the motor cells having the destructive effects of lesion transmitted to them at different points, as do the anterior cornua, the latter causing atrophy. Spitzka accounts for this atrophy by the disappearance of many of the fibers which run into the gray substance from the reticular process. He states that the cells in the anterior horn are not involved, as he has observed, although in its gross dimensions the anterior horn seems to be, as a whole, atrophied.

I have been much interested in a recent paper by Dr. Hammond,* but can not agree with him that amyotrophic lateral sclerosis and progressive muscular atrophy are the same, clinically or pathologically. That spasticity often precedes the atrophy and paralysis, or rather paresis, is true, but that the spastic symptoms or the excitable tendon reflexes disappear when atrophy and paresis begin is not true, as evidenced by the case now under observation. Furthermore, in progressive muscular atrophy we have no contractions, nor do we have periods of rest or apparent improvement, as in amyotrophic sclerosis, but a progression. Again, as pointed out, neither ascending nor descending degenerations are possible when the lesion is limited to the gray substance.

Profound alterations of the cord, when limited to the gray substance—either acute, as infantile paralysis, or chronic, as in protopathic spinal amyotrophies—are never followed by descending degeneration, unless it be by accidental propagation to the white fasciculi.

Again, according to the Wallerian law of secondary degenerations of nerves, it is always in a direction from the trophic centers. The pyramidal fasciculi can only degenerate downward. The only fasciculi in the lateral column that will submit to an ascending degeneration are the direct cerebellar fasciculi, and, so far as known, no symptomaticology has been affixed to their lesions.

Leaving aside the theories of muscular origin and of peripheral nerve origin of progressive muscular atrophy, the disease has been thoroughly studied and ably discussed in the past twenty-five years by Eisenmann, Roberts, L. Clark, Friedreich, Erb, Chareot, Wood and Dercum, Osler, etc. A majority of these and other observers show that by far the larger number of cases involve the anterior cornua alone, or these in connection with the antero-lateral columns; the number of cases in which the antero-lateral columns alone, or with the posterior columns and posterior nerve roots, being very limited, and more accurate investigation increases the number of instances in which lesions of the anterior cornua are found; and, as the fibers of the anterior roots arise from the cells of the anterior cornua, lesions of the latter must affect unfavorably the nutrition of the former, hence their atrophy. This disease would be regarded, then, as a chronic anterior poliomyelitis and the apparent extension to other parts of the cord. If at all unusual, a columnar, as on the ground of continuity of these parts.

The pathological lesions are in no way the same, nor are the clinical presentations in cases well fitted to present

ive muscular atrophy and amyotrophic lateral sclerosis, although progressive muscular atrophy may at times affect nearly all the different columns of the cord. Anæsthetic leprosy, labio-glosso-pharyngeal paralysis, disseminated sclerosis, etc., are not difficult of differentiation, if the origin, course, and negative symptoms are considered.

The treatment of amyotrophic lateral sclerosis and its allied affection, bulbar paralysis, like that of progressive muscular atrophy, can be but palliative and symptomatic, since the lesion is progressive in spite of drugs. Care of the patient, with attention to diet, exercise, climate, and baths, should be looked after. Most important of all is rest, as it seems to retard the progress of the case. Strong tonic treatment is indicated. Strychnine, if used at all, should be carefully watched, and stopped when reflex excitability becomes marked. In the case which I now have under observation I am under the impression that extract of Indian hemp has done much good. He has taken this remedy for about a year now; it acts probably by contracting the blood-vessels as well as by quieting nervous irritability. Were it possible to absorb any of the new-formed tissue, the combination of ammonium chloride and iodide of potassium should do some good. I have not seen the recent gold salts used, but have seen good results from these preparations in cirrhosis of the liver and kidneys, and should expect *a priori* good results in sclerosis of the cord.

Electricity to exercise the paretic muscles is palliative only. The cells controlling the muscles are degenerating and a progressive atrophy can hardly be prevented.

BOSTON.

GALVANIZATION OF THE BRAIN.

By J. F. HERRICK, M.D.

OSTEOMA, IOWA.

In an article in the *Therapeutic Gazette* for December, 1893, Dr. H. A. Hare made the statement that it is impossible to pass a current of electricity, such as is usually applied to the head, through the brain by means of electrodes applied to the cutaneous surface of the head. He bases his assertion on the fact that the electric current follows the course where it meets with the least resistance, saying that in the case of the head, with the electrodes applied to opposite sides, that course is through the skin and soft tissues external to the cranium itself.

The experiment given in which, with the electrodes (sponges) applied to the front and back of the head, a current of five m. ampères was shown, and with one electrode (a needle inserted except at the point) placed thru a trephine opening into the brain substance only one milli-ampère was shown with the same number of electrodes, is not convincing.

The electric current flows in a given number of substances proportionate to the general resistance met with in the circuit, and it is a fact that the larger the electrodes, other things being equal, the stronger the current. Therefore, in Dr. Hare's experiment, the difference in the current shown in the two instances (directly deposited externally) is due to the resistance offered by the brain substance, etc., but

* G. M. Hammond: *Progressive Muscular Atrophy*. N. Y. Jour. Med., June 6, 1894.

the peritonæum. Perforative general peritonitis is always infectious, and, as it is impossible to disinfect the peritonæum carefully, it is much better to remove all the liquid or to facilitate its flow by drainage. Finally, says Dr. Alexandroff, although the results obtained up to the present time by laparotomy in typhoid fever have not been satisfactory, it is to be hoped that the technique of this operation will be perfected, and that it will be undertaken sooner, and thus bring about better results.

PERSISTENT RECURRENCES OF INFLUENZA.

DR. THIBAUDET, of Saint-Claude, contributes an article on this subject to the *Gazette médicale de Paris* for September 1st in which he remarks that immunity from influenza, supposing that it exists at all, is of short duration. From a symptomatic point of view, nothing occurs in the interval between the different attacks. The apyretic patient recovers in the usual way, more or less exhausted and asthenic, according to the mode of reaction peculiar to each person, and, above all, according to the presence or absence of anterior morbid conditions. Suddenly the disease returns; fever reappears, and at the same time the characteristic pains in the head and limbs, coryza, coughing, laryngo-tracheo-bronchitis in the thoracic form, vomiting and diarrhoea in the gastro-intestinal form, and prostration and extreme lassitude in all forms appear. Generally the symptoms which predominated the first time appear again, but this is not always the case. Aside from complications, the duration of these new attacks is not longer or shorter than that of the first attack. Those which occur from six months to two years or more after the first seizure are not doubtful, and all physicians who practice in regions where influenza is endemic have observed many examples. It appears, then, that, far from conferring immunity, the first attack of influenza often predisposes the patient to a return of the disease.

Many physicians think that the disease is due to the swarms of common microbes living in the organism, especially on the skin and in the mouth, and that under certain influences, especially meteorological, the virulence of these germs increases enormously, the danger of contagion becomes greater, and an epidemic is the result. After a careful study of this question, and after experience with this disease, Dr. Thibaudet thinks the following conclusions may be drawn: 1. That during a period of from twenty days to four months influenza may attack the same organism from two to four times, with more or less pronounced symptoms. 2. That these repeated attacks should be attributed to a series of autochthonous reinfections by a small and rapidly increasing flora. The greater extension of the peritonæum and the concomitant with the

years. It began in an unvaccinated infant in the North Dublin Union Workhouse, but how it originally arose could not be ascertained. The northern part of the city has chiefly supplied the small-pox patients, who have been sent to Cork Street Fever and the Hardwicke Hospitals, only four patients having been admitted from the southern part of the city. All the cases have arisen from the North Workhouse or from tenement houses. Most efficient means have been taken to prevent the disease from spreading by vaccination and revaccination, disinfection of apartments where cases have occurred, and the burning of infected clothes and bedding, compensation for the latter being allowed by the corporation. The medical officers of the city dispensaries have arranged to make a house-to-house inspection among the poorer classes and vaccinate or revaccinate all who are willing to permit the operation, while dispensaries are opened in the evenings to vaccinate or revaccinate those who can not attend in the mornings. Among the deaths recorded was that of a woman, aged fifty-one, who had been vaccinated "in infancy and had one small bad mark." During the week preceding our correspondent's writing there were about eighty cases under treatment in the hospitals. There is little doubt that this outbreak of small-pox will shortly be stamped out and that the mortality will be very trifling; but should it increase to any great extent compulsory vaccination and revaccination will be adopted.

THE FAMILY DOCTOR AND THE HOSPITALS.

A highly esteemed correspondent dissents from the spirit of our last week's editorial article on this subject—or, more probably perhaps, misapprehends it. He says: "It is a well-known fact that physicians outside of the hospital staff, while they may be perfectly competent in many things, are not familiar with the workings of a thoroughly equipped operating-room, and the slightest mistake in asepsis may mean the loss of the patient. How, then, can the conscientious physician, knowing these facts, dare to jeopardize the life of his patient?" In the first place, we deny most emphatically and unequivocally that the capability of administering the principles of asepsis and antisepsis is confined to men who hold hospital appointments. In the next place, it was not the hospital surgeon's patient that we were speaking about, but the outside doctor's patient who had entered a hospital to avail himself of its material resources, and not from any distrust of his own physician. Carried to its legitimate conclusion, our correspondent's contention would justify any conceited practitioner in appropriating his brother-practitioners' patients whenever and by whatever means he might be able to do so. This, of course, would be intolerable.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 14, 1904:

DISEASES.	Week ending Sept. 4.		Week ending Sept. 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	1	25	17
Scarlet fever	14	—	17	7
Cerebro-spinal meningitis	6	0	0	1
Mumps	14	1	16	1
Diphtheria	104	—	124	37
Small pox	28	0	10	1
Tuberculosis	20	104	71	121

MINOR PARAGRAPHS.

SMALL POX IN DUBLIN.

The outbreak of small pox in Dublin can be traced to a party who returned from a visit to the United States, where the past fourteen

Changes of Address.—Dr. Calvin F. Barber (Brooklyn), to No. 57 South Oxford Street; Dr. George W. Jarman, to No. 61 West Seventy-fourth Street.

Society Meetings for the Coming Week:

MONDAY, September 17th: New York Academy of Medicine (Section in Ophthalmology and Otolaryngology); Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, September 18th: New York Academy of Medicine (Section in General Medicine); Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh, N. Y., Medical Association; Baltimore Academy of Medicine; Connecticut River Valley Medical Association (Bellows Falls, Vt.).

WEDNESDAY, September 19th: American Association of Obstetricians and Gynecologists (first day—Toronto); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New York Academy of Medicine (Section in Public Health and Hygiene); Medical Society of the County of Allegany, N. Y. (quarterly); New Jersey Academy of Medicine (Newark).

THURSDAY, September 20th: American Association of Obstetricians and Gynecologists (second day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, September 21st: American Association of Obstetricians and Gynecologists (third day); New York Academy of Medicine (Section in Orthopaedic Surgery); Baltimore Clinical Society; Chicago Gynecological Society.

The membranes were ruptured, and I waited three hours, and at intervals of fifteen minutes made an examination, leaving the finger there for some time to bring on contractions; but it was of no avail.

Instruments and an anæsthetic were spoken of. She and her husband would not consent to an anæsthetic. She said she could stand the instruments without.

I had some little difficulty in applying the forceps as the child was above the superior strait. She was delivered quite easily of a ten-pound girl yet alive but weak.

The woman and child have done well. It is my opinion labor should have occurred on February 3d.

W. S. JAMES, M. D.

A FORGED DIPLOMA.

MILLS TRAINING SCHOOL, BELLEVUE HOSPITAL.
September 8, 1894.

To the Editor of the New York Medical Journal:

SIR: I wish to call to your attention that a forged diploma of the Mills Training School for Male Nurses, Bellevue Hospital, is being used by Samuel A. Bowers, *alias* Albert Sidney Button. This school has never granted him a diploma.

OGDEN MILLS, Secretary.

Reports on the Progress of Medicine.

ORTHOPÆDIC SURGERY.

By HENRY LING TAYLOR, M.D.

Spinal Anterior Curvature with Mental Aberration.—

Three cases of mental disorder associated with a vicious attitude and a remarkable antero-posterior curving of the spine are described by Dr. S. Weir Mitchell (*Medical News*, Dec. 9, 1893). The cases were those of a man, a girl, and a boy, of whom the two latter were hysterical. In the case of the girl the curvature developed within a few months; the whole spine became bowed, the belly was protruded, and the head, which was dropped toward the chest, was elevated in order to see by arching the small of the back. There was no possibility of straightening the spine either passively or actively, but the attempt did not cause pain. There was little power of head rotation or flexion, though the neck muscles were not rigid. With gain in the mental state, the spinal symptoms were alleviated. The same description applied to the man, except that his difficulty was above the lumbar region. The author believes that these cases represent a new clinical entity.

Typhoid Spine.—

The painful condition of the spine sometimes occurring after typhoid fever and called "typhoid spine" by Dr. Gibney, who regarded it as a periosteomyelitis, is believed by Dr. Williams (*Medical Journal of the United States*, June, 1894) to be a result of infection of the spine by the typhoid bacillus. It is observed in other regions after typhoid, and associated with neuroathetic symptoms. The author adds that it is not unlikely that some of the cases called "typhoid spine" are actually due to the degeneration of "typhoid spine" and should not be accounted as a new entity.

Transverseotomy and Drainage of Tubercular Focus for Pott's Paraplegia.—

Dr. W. M. Mace (*Annals of the New York Academy of Medicine*, January, 1894) has made an attempt to cure Pott's paraplegia by a single transverseotomy of the spine. In each case the paraplegia had begun from one or more tubercular foci in the

Letters to the Editor.

PROLONGED GESTATION.

CLEVELAND, O., August 18, 1894.

To the Editor of the New York Medical Journal:

SIR: I wish to report this case in the *Journal*, as it is of great interest to me and may be of interest to others, and also may be the means of other similar cases being reported.

I was called to see Mrs. S. on February 24, 1894, in the morning; German, aged twenty-seven years. This was her fifth pregnancy. The other labors were normal. Her last menstruation was on April 25, 1893. On February 2d, two hundred and eighty-seven days after her last menstruation, she was taken with supposed onset of pain. A midwife was called, who said that "it was not true labor," and returned home.

The pains continued.

I found on examination that the first stage of labor was over. She had had no pain since February 2d.

I thought by mechanical irritation with the finger that the I might be able to bring on contractions, but failed.

I left her three sulphate-of-quinine pills of three grains each; one pill to be taken every three hours, and to send me a glass of urine.

I called in the evening, no pain. The woman was very happy. I discussed with her the possibility of a still-born child, but she said she had no pain and was happy as usual.

I gave her a teaspoonful of fluid extract of licorice and ordered her to rest. By contractions present there seemed to be slight contractions of the uterus, and the woman could be seen to be in pain. The pains continued, and the woman could be seen to be in pain. The pains continued, and the woman could be seen to be in pain.

and had been complete for several months. In the first case, the Pott's disease was in the mid-dorsal region, and there were large bedsores at the level of the trochanters. Laminectomy was performed without benefit, and death occurred from continued suppuration of the bedsores eight months later. In performing laminectomy on the second case of dorsal Pott's, the tubercular focus in the vertebra was accidentally opened. The paralysis rapidly disappeared, and the patient was walking in two months.

In the third case there was Pott's disease of the upper dorsal region, and laminectomy was performed without benefit. Two months and a half later several transverse processes were excised and the tubercular focus was evacuated. The patient was able to move the toes the same day, and the paralysis rapidly disappeared. The author recommends transversectomy with opening and drainage of the tubercular focus, instead of laminectomy, for Pott's paraplegia.

Scurvy in Infants Mistaken for Osteo-tuberculosis.—During the recent discussion on infantile scorbutus at the New York Academy of Medicine (February 15, 1894) several cases were cited where the exquisite tenderness and swellings near the articular ends of the bones of the lower extremity led to errors in diagnosis. Dr. Hall reported that one of his cases, with a swelling about the knee, had been diagnosed sarcoma, another tubercular osteitis of the knee, and a third infantile paralysis, on account of the helpless condition of the legs. H. L. Taylor's case (*Am. Med.-surg. Bulletin*, Feb. 1, 1894) had been taken for Pott's disease and for disease of the hip joint. Dr. Dillon Brown, to whom I am indebted for the two following citations, has called my attention to Howard Marsh's report of two cases in young children, in whom scurvy, attended with swelling in the gluteal region, was at first regarded as hip disease. The peculiar character and location of the swellings, the frequent presence of spongy or bleeding gums, and the rapid improvement on fresh milk and orange juice, should prevent mistakes.

Rare Spinal Affections.—Among the more unusual spinal affections considered by Howard Marsh in a recent lecture (*Lancet*, Sept. 30, 1893) are (a) those of early life; these may be tubercular, of which he saw a case six months old, or a lateral or posterior bowing due to rickets, or the bowing with exquisite tenderness due to scurvy. Then there is (b) a type designated as "quiet spinal caries," in which the course of the disease is rapid but painless, and ends in firm ankylosis. The author takes pains to say that the amount of ankylosis following joint inflammation is determined by the plastic character of the inflammatory process, and not by the fact that the joint is artificially kept at rest. He has frequently seen tuberculous joints recover with absolutely unimpaired movement after having been uninterruptedly kept in splints for eighteen months or two years.

The late paralytic case of primary disease of the spine, which was the subject of a recent lecture at the New York Academy of Medicine, was mistaken for those of cervical Pott's disease, and a swelling in the right suboccipital region for a tubercular abscess. The child died in a few days. The disease was of the body of the first cervical vertebra, and the swelling was due to the pressure of the bone on the spinal cord. The author has seen a similar case in a child, in which the swelling was in the right iliac region, and the disease was of the body of the fourth lumbar vertebra. Scurvitic disease of the spine the author believes to be very rare, and he has seen no case in an adult.

The Early Diagnosis of Hip Disease.—In a careful paper (*Am. Med.-surg. Bulletin*, Jan. 15, 1894) Howard Marsh states that the diagnosis of hip disease is not always easy, and that the characteristic pathognomonic, but that the diagnostic symptoms

is characteristic. The symptoms are lameness, pain, altered position, impaired movement, muscular wasting and swelling. Pain or lameness or both may be entirely absent, and even impaired movement is occasionally wanting. The lameness due to hip disease is variable, and may at times disappear. Pain is not very rarely entirely absent, and is generally slight in the early stages; it may be in the hip, groin, knee, or inner side of the thigh. The characteristic position is abduction, eversion, and flexion, which may, however, be slight and difficult to detect without a critical examination. Impaired movement is the most important symptom. It is useful to test the sound limb first. Flexion is usually diminished, but the rotation test is more delicate. The author fails to draw attention to the altered quality of the motion, due to muscular spasm, which to a practiced touch is the most characteristic symptom of all. Muscular wasting is marked within three weeks. Swelling is usually masked by the thick coverings of the joint. After a few days' rest in bed the symptoms may almost entirely disappear.

Nearly every one of the symptoms mentioned may be due to other causes.

Excision of the Hip.—Dr. Sherman, of San Francisco (*Occidental Med. Times*, November, 1893), gives an interesting analysis of his experience in the treatment of hip disease. In eight years he saw a hundred and forty-six cases of hip disease, of which forty did not remain for continued treatment.

Forty-two were treated conservatively with the following results:

Recovery with perfect function, seven; recovery with imperfect function, ten; died of tuberculosis, four; still under treatment, twenty-one.

Sixty-four cases were excised, of which six could not be traced; of the remaining fifty-eight cases there were: Recoveries, thirty-two; deaths, thirteen; still under treatment, thirteen.

The causes of death were: One from chloroform during a secondary operation; two from shock; five from tuberculosis soon after the operation; five from tuberculosis later.

In the thirty-two cases (two with disease of both hips) that recovered, the average shortening was about two inches, and the motion and position were better than in the ten non-operative cases reported as imperfect recoveries. In twenty-four of the excised cases the limp was noted; in five it was bad, in five medium, and in fourteen slight. Four use crutches and one a cane.

Bone Operations for Clubfoot.—A careful analysis of four hundred and thirty-five bone operations for the correction of clubfoot, performed by a hundred and eight operators, has been given by Dr. H. A. Wilson (*Am. Med.-surg. Bulletin*, Feb. 1, 1894). There were seven deaths: three from septicemia, three from diarrhea, and one from carbolic-acid poisoning. In one case the foot had to be amputated for gangrene, and two cases are described as failures without explanation. The age of the patients ranged from three weeks to forty-seven years; twenty-nine operations were done on patients under two years, a hundred and twenty-six under six, and two hundred and thirty-four under ten. Simple excision of the astragalus was done a hundred and fifty-six times, and sixty-eight forms of bone operations were performed on the remaining cases. As to after-treatment, "it is stated that braces or some form of apparatus or support were required in nearly all the cases here recorded." The results of operation are given under numerous heads, but two hundred and thirty-one may be grouped as good or excellent, a hundred and fifty-two as not definitely stated, and forty-two as not benefited, including two amputated for pain, and seven deaths as before stated. The author, in ac-

probably due to the inflammatory process in the cord. Treatment of attack: Calomel, leeches, ice bags to spine, and diaphoresis. In the chronic stage, measures to improve the general health are indicated, and locally, heat, massage, stretching, electricity, and mechanical support (brace). "The last is of the greatest importance, for by it the limb is kept in proper position, stretching of the paralyzed muscles and displacement of joints with relaxed ligaments are prevented. Further, a child who can not walk at all without it is able to walk with comparative ease with its brace, and so not only is the affected limb exercised, but the whole body is benefited." Electricity, especially galvanism, is useful, but "if too strong a current is used, or the application too long continued, actual harm may be done." The author concludes that even long-standing cases improve under regular and persistent treatment (two or three visits a week for many months) where galvanism causes a fair contraction of the muscles. "But the earlier the case is undertaken, the more hopeful will be the prognosis."

Miscellany.

The Bacillus of the Chinese Bubonic Plague.—The *Lancet* for August 25th contains an article on this subject by Professor S. Kitasato, who gives an interesting account of this disease and its bacteriological character. The bacilli, he says, are to be found in the blood, in the buboes, in the spleen, and in all other internal organs of the victims of the plague. The bacilli are rods with rounded ends, which are readily stained by the ordinary aniline dyes, the poles being stained darker than the middle part, especially in blood preparations, and presenting a capsule sometimes well marked, sometimes indistinct. The bacilli found in the spleen are best stained by a solution of methyl blue. The bacilli show very little movement, and those grown in the incubator, in beef tea, make the medium somewhat cloudy. The growth of the bacilli is strongest on blood serum at the normal temperature of the human body. Under these conditions they develop luxuriantly, and are moist in consistence and of a yellowish-gray color; they do not liquefy the serum. On agar-agar jelly they also grow freely. The different colonies are of a whitish-gray color, and by a reflected light have a bluish appearance; under the microscope they appear moist and in rounded patches with uneven edges, and look they appear everywhere as if piled up with "grass wool," and later as if having dense, large centers. If a cover-glass preparation is made from a cultivation on agar-agar, and, after having been stained, is observed under the microscope, long threads of bacilli are seen, which are not to be mistaken for a coccus chain, but are recognized with certainty as threads of bacilli under closer observation. The growth on agar gelatin is similar to that on agar-agar; in a puncture cultivation in the following temperature after a few days there are found greenish colonies, which are not to be mistaken for coccus chains, but which are to be recognized as threads of bacilli.

On freshly prepared agar-agar, and on agar-agar, the bacilli are not so numerous as on the agar-agar which has been used for a long time. If they are found in small quantities, cultivation on agar-agar is not to be recommended, as the bacilli are not so numerous as on the agar-agar which has been used for a long time. The growth of the bacilli is strongest on blood serum at the normal temperature of the human body. Under these conditions they develop luxuriantly, and are moist in consistence and of a yellowish-gray color; they do not liquefy the serum. On agar-agar jelly they also grow freely. The different colonies are of a whitish-gray color, and by a reflected light have a bluish appearance; under the microscope they appear moist and in rounded patches with uneven edges, and look they appear everywhere as if piled up with "grass wool," and later as if having dense, large centers. If a cover-glass preparation is made from a cultivation on agar-agar, and, after having been stained, is observed under the microscope, long threads of bacilli are seen, which are not to be mistaken for a coccus chain, but are recognized with certainty as threads of bacilli under closer observation. The growth on agar gelatin is similar to that on agar-agar; in a puncture cultivation in the following temperature after a few days there are found greenish colonies, which are not to be mistaken for coccus chains, but which are to be recognized as threads of bacilli.

corner of the cage. The parts around the point of inoculation are infiltrated with a reddish, gelatinous exudation, the spleen is enlarged, sometimes there is swelling of the lymphatic glands, and bacilli are found in all the organs. The results found after death in animals are very similar to those found in anthrax and in edema malignum. Pigeons do not appear to be susceptible to the influence of the bacilli.

The recent outbreak in Hong Kong, says the author, has given an opportunity of studying this disease with the means which modern science has placed in our hands. The principal symptoms are the following: After the period of incubation, which lasts from three to five days, the patient complains of high fever and swelling of one or more of the lymphatic glands. These swellings may precede, accompany, or follow the rise in temperature, and are accompanied with severe pain. The gland most commonly affected is one of the femoral chain; next an inguinal, and then an axillary, and sometimes a cervical gland is affected. The tongue is coated with a grayish-white or dark-brown heavy fur. There are headache and delirium, the heart is generally affected, and occasionally vomiting and diarrhoea are present. The two last conditions are generally forerunners of a fatal issue. In patients who recover, the temperature does not fall until a week has passed, and convalescence is a slow process. Sex and age make no difference in the disease; all are equally attacked. It is not always an easy matter, says the writer, to demonstrate the presence of the bacilli directly in the blood of many patients; they are sometimes present in such small numerical strength that only after examining several slides can they be discovered. In order to be safe, not only must the blood of a suspected patient be examined, but a cultivation should also be made. In the buboes the bacilli always occur in the form of pure cultivations, but it is not always easy to procure a specimen of bubo contents from the living subject, and the question arises, Is it possible to make a diagnosis from an examination of the blood of the patient? In many cases Dr. Kitasato thinks it is, but, he says, a good deal of bacteriological practice is required, or such a diagnosis is impossible. In the blood of human beings suffering from bubonic plague there is a new bacillus possessing the following qualities: 1. This bacillus occurs in the blood, in the buboes, and in the internal organs of the plague-stricken only. 2. This bacillus is not to be found in any other infectious disease. 3. With this bacillus it is possible to produce in animals the identical symptoms which the disease presents in human beings. We may suppose, says the author, that they have three principal channels of entrance: by respiration, through an external wound, and by the intestinal tract. Examples of the latter way are not positive so far, but, as bacilli were found in the intestinal canal, and experiments on animals proved that feeding alone produced definite results, it must be conceded that the third way is a possible method of infection.

The means to be employed against the plague should be preventive measures, general hygiene, good drainage, perfect water supply, cleanliness in houses, and cleanliness in the streets. After a patient has apparently recovered, he must be kept apart from others for a period of a month, for during convalescence the bacilli may be discovered in the blood from three to four weeks after all symptoms have ceased.

Cancer in Normandy.—The *Revue de Médecine* for August contains an account of the results of an inquiry made by Professor Brouardel of the Faculty of Medicine of Rouen, who had prepared a series of questions for the physicians of Normandy on the different points relative to the history of cancer. He had been surprised with an answer furnished by M. Armandet in the *Revue de Médecine*, in which he stated that he had

[illegible]

trophy of the tonsils became, therefore, he said, a most important etiological factor in the invasion of the system by certain infectious disorders.

Of these cases which Sokolowski had detailed, in which the tonsils had been removed, which had formed the basis of that author's histological examinations, all had presented apparently more or less identical symptoms—viz., shivering, fever, enlarged cervical glands, and isolated white-yellow spots on the tonsils, which had been apparently of lacunar origin, redness and swelling of the glands, and no recurrence after extirpation. Histologically, there had been found greatly widened lacunæ, with contents consisting of epithelial debris along with micro-organisms and a fibrinous network. There was no special change in the lymphoid tissue or the follicles, except that, upon double staining, many strongly colored cells of large and irregular form, containing large nuclei and resembling plasma cells, had been found in the follicles lying near the lacunæ and in the lymph-vessels and adenoid tissue. Another case, which had been examined by the Polish observers, was important from the fact that no pathological changes except slight catarrh had been found in the lacunæ, but the white-yellow mass on the surface of the tonsil, which lay thick over the lacunar openings and simulated secretion, had formed a really typical diphtheritic membrane of fibrin and lymph-cells with diplococci. These observers had concluded, however, that there had been the same essential process in all three cases—i. e., fibrin in the lacunæ or on the surface, with pseudo-membrane, and superficial necrosis—the second case, however, being typically diphtheritic and therefore the most important as to the identity of these two processes (angina lacunaris and diphtheritis); the clinical symptoms were the same, the anatomical changes were the same, and the whole difference between them consisted in the localization of the process. If it occurred in the depth of the lacunæ, it was then typical angina lacunaris, and, as pathological anatomy showed no difference between the two processes, angina lacunaris must, according to these observers, be regarded as a pseudo-membranous catarrh. In Dr. Wolfenden's opinion such a wide-reaching conclusion as to the nature of the process could not be justified by merely anatomical findings. A doubt might be expressed whether the second case referred to had been in any sense a typical angina lacunaris, and not a mild form of diphtheritis, and it could not be said that the processes were identical without a careful bacteriological study of the cases. The presence of fibrin was merely indicative of the amount of local injury, and the speaker thought the term "pseudo-membrane" an unfortunate use of language.

With regard to the bacteriology of the subject, Dr. Wolfenden said that the organisms met with in angina lacunaris were those commonly met in suppurative processes, viz., *Streptococcus pyogenes*, the *Staphylococcus*, and in a few instances the *Micrococcus*. Nothing, he said, was more distant from the nature of these organisms, in the local condition. There he resorted to only the term "catarrh," although, when the lymphoid tissue had acquired the form of a diphtheritic exudate, he used the term "diphtheria," and that was chiefly in the sense of a general term, embracing the local and systemic conditions, together with the organisms of the process, as existing in the throat and affecting the lives of the same, rather than a specific cryptic amygdalitis. It was a question of the degree of these conditions.

Wolfenden had frequently had occasion to apply the term "diphtheria" when occurring in acute angina, but in a suppurative angina had been as up to the time of making out the organism, the organism, he said, had been the same. It was now a matter of common knowledge that diphtheria, which had formerly been limited to a group of diphtheria

in the diagnosis of diphtheria from ordinary catarrhal amygdalitis, was no longer to be considered as evidence of a diphtheritic process. The fact was that it was rarely absent in cases of acute cryptic amygdalitis, and the speaker had observed its occurrence in many cases that had come under his care. Other lesions which might occur in cryptic amygdalitis were cardiac inflammations. Haig Brown had found cardiac murmurs in thirty three cases out of three hundred and forty-five of amygdalitis. They had commonly been mitral systolic, and had disappeared within three weeks. This was not a large proportion, but, if systematic examinations of the heart were made, these murmurs might be detected oftener. Affections of the respiratory organs were not so common in infectious amygdalitis, although pleurisy had been observed by several writers. Orchitis, sometimes with suppuration, oophoritis, arthralgias, skin eruptions, erythema nodosum, purpura, and polymorphous erythema had been observed. Phlegmonous adenitis might occur, and the enlargement of the cervical glands in acute cryptic amygdalitis was so common that one of the classical symptoms of diphtheria was no longer of value in diagnosis.

Dr. Wolfenden referred to the occurrence of paralysis in cases which had come under his observation in which the patients had presented very slight symptoms followed by evidences of severe intoxication of the system. In most of these cases he had made the most careful inquiry as to the possibility of such patients having been in contact with diphtheria. But there had been no proof of such infection, and it would be natural to conclude that the patient had been suffering from a mild attack of diphtheritis, although such a conclusion would scarcely be justified from the clinical course of the symptoms. In view of the fact that in an ordinary acute angina such a variety of micro-organisms developed, not only the streptococci and staphylococci, but the *Bacillus crassus apuigenus*, the cultures of which produced a powerful toxine, and the pseudo-Loeffler's bacillus, etc., a rule could not be laid down that severe intoxication of the neuro-muscular system, manifested by paralysis of greater or lesser intensity, must necessarily justify the diagnosis of diphtheria. The subject was one full of difficulty, which bacteriology alone could decide, and the time had not arrived when different forms of throat inflammations might be classified upon a bacteriological basis, but the author believed that such terms as "croupous," "diphtheritic," "diphtheroid," "membranous," etc., would be abolished. A bacteriological examination was required in all cases, so that experience might enable us to extend our observations and also to classify these various anginas according to bacteriological terminology, for, although they resembled diphtheria clinically, they were not diphtheria. He thought that the time was not far distant when the inflammatory conditions of the tonsils and the throat would be classified upon a bacteriological and not upon an anatomical or clinical basis. Clinical experience demonstrated how great might be the errors of diagnosis and prognosis in these obscure

cases. There was a large question of how they were to be treated. There were good reasons for regarding it as a bacteriological diagnosis, and for practicing it systematically.

Dr. Wolfenden gave the following illustration, dealing with the question that just had been mentioned, when he told of a case of angina lacunaris, which he had seen in a patient who had been treated for diphtheria. The patient was a young man, who had been in the hospital for diphtheria, and was now being treated for angina lacunaris.

Lacunar amygdalitis was not lacunar diphtheria. There was a lacunar amygdalitis, and there was a lacunar diphtheria, but there were no signs of the former disease in the present condition of the patient. Whether the

ances were of fibrin or croupous, or of adherent membrane (or diphtheritic), did not make the condition either croupous or diphtheritic. It merely marked the extent of the local injury and the intensity of the process. Follicular, or acute, amygdalitis, which was the most interesting form, was not follicular at all. It was a simple or desquamative infection, due to streptococci, staphylococci, or pneumococci. It was also possibly contagious.

The clinical appearances alone allowed so little ground for a diagnosis of simple amygdalitis from diphtheria that, in the absence of bacteriological diagnosis, it would be wise to isolate such patients from the first, until the course of the disease rendered its nature positive. This was all the more necessary since the placing of patients with streptococcal pseudo-membranous throats in wards where there was diphtheria might convert a simple case into a fatal one. Bacteriology, then, said Dr. Wolfenden, should be the basis of the diagnosis, and no hospital or institution was complete without such an adjunct as a properly equipped laboratory.

Superintendents of American Lunatic Asylums.—We lately quoted freely from an address delivered by Dr. H. Weir Mitchell, of Philadelphia, arraigning American asylum superintendents for their shortcomings. In the September number of the *Journal of Nervous and Mental Diseases* Dr. Livingston S. Hinckley, of the Essex County, N. J., Hospital for the Insane, at Newark, takes the position that superintendents, as a rule, are not to be blamed for the defects pointed out in Dr. Mitchell's address. After showing how political considerations often so prevail with boards of managers that everything connected with asylum management is made to yield to them, Dr. Hinckley remarks that, in view of the demoralizing consequences which the interference of frequently changing boards of managers entails, consequences fraught with perplexing difficulties, it is clear to the minds of impartial observers that Dr. Mitchell has been unduly severe in his criticism and condemnation of medical superintendents. He speaks of the "amazing lack of complete physical study of the insane, the oddly defective schedule guide to symptom notes, the failure to see obvious lesions, the want of thorough day-by-day study of the secretions in the newer cases, of blood-counts, temperatures, reflexes, eye-ground, color fields," and accuses asylum superintendents, of fostering the superstition and "widespread belief that there is some mysterious therapeutic influence to be found behind the grim walls and locked doors of asylums for the insane." These charges, says Dr. Hinckley, can not be ignored. Such an unqualified arraigning is extremely unjust, and, if not refuted or explained, would be fraught with disastrous consequences to the public confidence imposed in these men. The high professional repute, the unimpeachable integrity, and the earnest fervor of the noblest workers in Dr. Mitchell's own overwhelming testimony to Dr. Mitchell's sincerity of motive and honesty of purpose. To the student of insanity, who has had sufficient practical experience in its treatment to enable him to separate the useful and profitable remedies from the great mass of unprofitable failures, Dr. Mitchell's ideal hospital for the insane, a group of highly colored visions rather than of the careful, accurate, and scientific of a scientific basis, and been needed by the superintendents of the world. Most seriously, says Dr. Hinckley, the current state of the current physical examination of the insane is generally good, but only in a few cases is it complete, and a great deal more is to be desired in the treatment. In the present state of our public opinion, however, there are often serious and avoidable, if not inevitable, the sort of restraint becomes at times absolutely unavoidable, and the greater the need for that restraint, the greater the need of a

chemical or of a mechanical nature, and the introduction of a system of treatment which would enable alienists to treat successfully all cases of insanity without resorting to any form of restraint, either chemical or mechanical, would mark an epoch in the history of therapeutics, and would be regarded as the greatest triumph of modern medicine.

Mr. Ernest Hart and the Indian Medical Congress.—It seems that Mr. Hart, the editor of the *British Medical Journal*, has offended some of the medical men of India to such a degree as to lead the *Medical Reporter*, of Calcutta, to remark on the likelihood of Mr. Hart's being present at the congress to be held in Calcutta next December in the following terms:

"For Dr. Hart, and for his paper, we have the highest respect, but we desire to offer a protest on behalf of the whole of the non-official, and even some portion of the official medical profession, against Dr. Hart's strictures in his paper against their work in India. We are willing to believe Dr. Hart wrote on imperfect information—nay, we are even willing to admit that he wrote on prejudiced opinion supplied; but until he withdraws his ungenerous remarks on medical men of and in this country, it is meet that they should refuse to meet him in fellowship. This is no reflection on the congress scheme. This is no desire to hamper the efforts of those arranging for its holding. Our anxiety to support the congress can not be misunderstood; we only sound a note of warning that if Dr. Hart is elected as a prominent member of the congress it will give offence."

A Substitute for Milk as an Article of Food for the Sick.—In the July number of the *Australian Medical Journal* there is a paper by Dr. J. W. Springthorpe entitled *A New Food for Use in Typhoid and Other Fevers* which was read at the June meeting of the Victorian Branch of the British Medical Association. The author remarks that since the time when Liebig's views were discarded, milk in some form or other has been almost universally recognized as the most suitable food for typhoid-fever patients. He thinks, however, that its disadvantages call for mention. In the first place, it fulfils but imperfectly the requirements of a fever food. The author cites Voit as having shown that three pints and a half of milk of good quality, containing from eight to ten per cent. of cream, although it satisfies a healthy adult doing no work, is deficient in the requisite amount of albumin, and, although it contains twice the necessary amount of fat, is wanting in carbohydrates to the extent of two thirds. If we hold that a fever diet should contain more carbohydrates and less albumin than a non-fever diet and be free from fat, we must conclude, he says, that the quantity of milk recommended by the best clinicians must fail to meet the requirements of a continued fever, even when some form of animal broth is added, and it is to this imperfection, he thinks, that we must ascribe some at least of the wasting observed in such fevers. In the next place, although milk is taken into the mouth in a liquid state, it becomes more or less solid in the stomach. The curdling may, no doubt, be diminished by appropriate dilution and admixture, but it is doubtful if it is ever prevented entirely, and practically it may be asserted that curdling very frequently occurs. The undigested curd represents so much lost albumin, while the curd, themselves are a frequent cause of rise of temperature, restlessness, diarrhoea, or other aggravations of an already serious if not dangerous condition. Moreover, milk is very apt to ferment after it is taken, resulting in distention and all the discomforts and dangers connected therewith. In addition, there are often difficulties attending its satisfactory administration. To a certain number of persons it is a positively distasteful, while it disagrees more or less with most persons of the

large class having an hepatic temperament. Hence it must be diluted with alkaline waters, which favor the growth of the specific cause of the disease, or with effervescent waters, which aggravate the distention, or it may be peptonized, which is often difficult and frequently obnoxious. Furthermore, its purity is often so questionable that it has to be prepared for use by boiling, it often turns sour, and its condition prior to its administration can seldom be termed aseptic, while its composition, and hence its nutritive value, vary within wide limits. In addition, although, as compared with ordinary diet, milk, as has recently been stated, may lessen the number of micro-organisms in the intestine, still the fact remains that the bacillus of Eberth can and does grow even in sterilized milk. Finally, as milk is incompatible with acids, its ordinary administration hampers the use of acid medication, even if it does not entirely prevent it.

Having learned of M. de Bavay's discovery that a sterilized hopped malt extract was superior to either broth or milk in its power of resisting the growth of Eberth's bacillus, the author was led to consider its suitability as a substitute for milk, and his first step was to compare its composition with that of milk. Analysis showed that it consisted of soluble carbohydrates, peptones, parapeptones, amides, a small proportion of ash rich in phosphoric and lactic acid, and the extract of hop. The carbohydrates are represented by maltose, dextrose, levulose, and dextrin. The entire extract amounts to fifteen per cent., which is about the same as in good cow's milk. The ash is 0.25, and the average proportion of lactic acid is 0.18. He estimated that there were from eight to twelve grains of lupulin in three pints of the extract. This analysis, though not exhaustive, was enough to suggest that hopped malt extract was probably superior to milk in nutritive value, was sterilized, and had all its active principles predigested, while it was not incompatible with acids and contained a moderate dose of a recognized sedative.

The malt extract was next tested clinically during an epidemic by using it in forty consecutive cases occurring during a period of six months. Its favorable action soon became so apparent that whenever there was any temporary difficulty in maintaining a supply it was reserved for the worst patients, and those whose illness was not so severe were put back upon the use of milk. After the extract was sterilized the bottles were kept on their sides until they were opened, and no bottle was used that had been open twenty-four hours. The patient was given five ounces of the malt every two hours. In addition, he had ice, ice filtered water, and from half a pint to a pint of a drink consisting of a drachm and a half of diluted phosphoric acid in a pint of water. Sponging was used as in antipyretics, and when that failed quinine. Stimulants were used according to the indications, and complications were treated in the usual way. Some intestinal antiseptics were attempted by means of cathartic acid or boric acid in addition to the acid contained in the food and in the drink.

"From the test thus applied," says Dr. Spengler, "it is evident to draw the following conclusions:

"(1) We have in this sterilized hopped malt extract a food which can replace milk in the treatment of typhoid fever. Here is a series of cases fully cured which had practically no other food during the weeks that they were under treatment in the hospital. As the accompanying charts show, in twenty cases the fever took a course of about five weeks, and in four the fever lasted more than a week. In six of these six patients no complication, no further intestinal hemorrhage, no cerebral effusion, and no other pathology. In one there was a typical and severe cerebral typhoid. It can not be said, therefore, that the cases thus treated were of less the average severity.

"(2) This new food has many advantages over milk. Thus its composition may be made definite; it is easy to keep and to administer; there is no risk of souring; no need of peptonizing or of adding alkalies or effervescents; and it goes naturally with acids.

"(3) In many ways it meets the requirements of the case better than milk. Thus the active principles are predigested, the carbohydrates predominate, fat is absent. Again, with its use there is no such thing as curdling. Throughout the series the motions were apparently intestinal secretion tinged with malt; there is no loss of albumin and no irritation of the intestine. And it is noteworthy that, on several occasions, when a few doses of peptonized milk had to be substituted for the malt, some patients at once passed curds with their stools. Further, the food remains unfermented throughout the intestine. It was partly to assist this, and partly from its own merits in typhoid antiseptics, that boric acid was given with the malt. As a matter of fact, in no single case did we have any distention—an occurrence without parallel in my experience of the previous six epidemics, and one too good almost to expect always in the future. Again, some influence was exerted upon the reaction of the stools, and hence, in all probability, upon the reaction of the intestinal contents also. Thus, though we were unable to obtain permanent acidity, the stools became actually acid on four occasions, when the bowels were open several times in rapid succession, and in a large number of cases the reaction was altered from alkaline to neutral. No doubt the addition to the food produced much of this change; still, the food helped.

"(4) It exerts upon the disease a beneficial influence which is not found in the case of milk. Thus its influence upon the nervous system was very marked. Sleep was undoubtedly promoted. Instead of insomnia, requiring the use of dubious sedatives, most of our patients slept in a manner and degree which was as gratifying as it was surprising. The average slept over seven hours; many slept nine hours and over; one very severe case slept twelve hours. No doubt most of this benefit must be ascribed to the lupulin, and its usefulness is so suggested that M. de Bavay has isolated for me the alkaloid (hitherto unused clinically) for further testing. Still, some at least of the good may be due to the better feeding of the case by the new food. Again, a beneficial influence was seen in our temperature curves, thirty-eight of which are exhibited this evening for your further study. Not that there is any noticeable shortening of their duration (as well expect a runner to give a competitor fifty yards' start in a hundred, as shorten the last three weeks' temperature of a disease which has had three weeks' start). In all, however, you will notice that the remissions began at once, no matter what the stage of the disease, and, except in the fatal cases, they continued through the end of the disease. Our curves were, on the whole, noticeably below those of other patients in the hospital during the same time and on milk diet. It is, of course, impossible to append all these charts to the present issue of our paper, but numerous are selected which illustrate the points referred to. Of course, it must not be understood that all were equally influenced; still, all were apparently well-treated, and most were in cases of severe fever.

The results of the series in the change of the reaction of the contents of the intestine to the milk diet. Not surprisingly, the reaction of the stool with malt was at first almost entirely neutral. Our supplies, but later, the acid in the system, the quantity secreted was that which we had. If this secretion be taken into account on the one hand, and that which is excreted from the stool, and possibly from a smaller quantity of excretion, we have a picture of the reaction of the milk diet on the system during the disease which we are studying.

valued better than similar patients under the milk diet. It will require, however, further evidence before this can be regarded as definitely proved."

As to the question of objections to the use of this food, the author states that, inasmuch as it is a liquid and deficient in proteins, it is not very satisfying to those who are accustomed to a more solid and stimulating diet or who crave it, but he has not found that it is less satisfying than milk—if anything, the contrary is the case. Some dislike its sweet taste, but this may generally be overcome readily by washing the mouth with an acid solution or by sucking a small piece of ice. There is the theoretical objection, says the author, that such a food may drive germs from the contents of the intestine into the intestinal tissue; but, though certain of his charts showed a fall of temperature followed by a somewhat suggestive rise, the meaning of which, he says, requires further consideration, the general results show that there is nothing serious in the objection.

The author gives the following directions for making sterilized hopped malt extract: Infuse crushed English barley malt with twice its weight of water at a temperature of 165° for two hours. The mash produced should be at a temperature of 151°. After draining, the sweet wort is run off and "sparged" with water at a temperature of 170° until the malt is perfectly extracted. It is then collected in the copper, and, when saccharification is complete, saccharose sugar is added to bring about inversion into dextrose and levulose by the diastase of the malt. The contents of the copper are brought to the boiling point, and after boiling for half an hour to precipitate the albuminoids thus removable, hops are added and the boiling is continued for an hour and a half. The tannin of the hops precipitates a further portion of the crude albuminoids. This wort is then run over a large quantity of raw hops to extract from them an additional amount of the essential oil and other volatile constituents of the lupulin. In all, twelve pounds of hops and a hundred and fifty pounds of sugar are used to each quarter of malt. The extract is then bottled, corked, and put into a steam bath at a temperature of 212° and kept at that temperature for two hours. After removal, as soon as the bottles are lukewarm, they are laid on their sides. If this had been done before, the vacuum formed during cooling would have given rise to an explosion. If good corks are used, the filtration through them is sufficient to sterilize any air that may enter, and if the bottles are left on their sides contamination does not occur. The bottles are now ready for use. If they are kept, a further precipitate is produced by the oxidation of the albuminoids, but this can easily be separated, if desired, by filtering the last portion before it is used. Assuming that only half the lupulin of the hops is extracted, there are eight grains and a half of hop present in three parts of the extract.

The Treatment of Vomiting in Children.—The *Journal de l'Hygiène* (de l'école de médecine) for August has published the following directions and formulas to be used in the treatment of vomiting in children. Every young child should be made to swallow small pieces of ice before nursing. Milk diluted with three parts of water should be given. Infants under a year should have three grains and three minims of tincture of opium to be put on the tongue. The diet should be restricted to small quantities of food, and the stomach properly regulated. For older children, tea drinks, ice, and physical rest are recommended. A vomit and one of the following formulas to be taken frequently with the first of the vomit. Formula 1.—One grain of opium, one grain of calomel, and twenty drops of tincture of opium, mixed with a half of a glass of sweetened water, given at five and ten minutes and twenty minutes after the onset of the vomit.

Fonssagrives recommends the following: Essence of caput, from six to twelve drops; sugar, thirty grains. When this is thoroughly mixed, add an ounce of syrup of tolu and three ounces of Melissa water. From a teaspoonful to a tablespoonful is to be taken every hour. Huchard prescribes seventy-five grains of tincture of iodine and two hundred and twenty-five grains of saturated chloroform water, of which from two to six drops are to be taken in a little sweetened water.

For nervous children, over twelve years old, Ewald prescribes cherry laurel water, three quarters of an ounce; tincture of belladonna, seventy-five grains; cocaine hydrochloride, four grains and a half; morphine hydrochloride, three grains. From five to ten drops are to be taken every hour or two. The following formula is recommended by Guibourt: Syrup of lemon, three hundred grains; lemon juice and orange-flower water, each, two hundred and twenty-five grains; linden water, two ounces; Sydenham's laudanum, nine grains; sulphuric ether, fifteen grains; potassium bicarbonate, thirty grains. The bottle should be corked immediately, and from a quarter to a third of the mixture is to be taken at once. Le Bariller advises the use of the ether spray over the epigastrium; also blisters or the actual cautery over the same part.

The Treatment of Intermittent Fever in Children.—The *Presse médicale* for August 25th publishes an article on this subject by M. J. Simon, who remarks that he gives quinine sulphate in large doses from once to three times in the course of an hour, then a series of small doses up to the moment when the attack comes on, or until symptoms of cinchonism appear. If the dose in the beginning is from a grain and a half to three grains, the author prescribes afterward a dose of three quarters of a grain to be taken every two hours until there is a buzzing in the ears or a slight slackening of the pulse. After the attack has been arrested the large and small doses are diminished, but the use of quinine salts must be carefully continued for four or five days after the symptoms of paludism have entirely disappeared. Physiologically, the action of quinine salts appears three hours after their ingestion, but in pathological cases the functions of absorption are disturbed, and the dose should be given from ten to twelve hours before the attack comes on. It should be given also before eating. The author gives the following formulas: For an injection, quinine sulphate, three grains; Sydenham's laudanum, from one to two drops; Rabel water, a sufficient quantity; water, from an ounce to an ounce and a half. For a suppository, quinine sulphate, from three quarters of a grain to a grain and a half; cacao butter, thirty grains. For an ointment, quinine sulphate, fifteen grains; lard, half an ounce; ammonium chloride, thirty grains; or the following may be used: Quinine valerianate, sixty grains; lard, an ounce and a quarter. For a pill, quinine sulphate, three twentieths of a grain; honey, a sufficient quantity. From five to fifteen of these pills may be given in currant jam.

Railway Neuroses not Sui Generis.—The *Alienist and Neurologist* for July says that, according to Dr. de Jacobson (*Hosp. Tid.*, September 20, 1893), Oppenheim has yielded to the philosophical deductions of Charcot, Gilles de la Tourette, and others, and the French school has convinced the German school that neurotic disturbances following railroad accidents are not true neuroses *sui generis*, but the shock attending railroad accidents simply develops the ordinary symptoms which manifest a neurotic diathesis, such as paralysis agitans, epilepsy, disseminated sclerosis, or insanity, but nearly always hysteria or neurasthenia, or the two combined. Page, in his latest work on injuries of the spine and spinal cord and nervous shock, supports the French school.

Lectures and Addresses.

FOUR CASES OF
CHRONIC PULMONARY INVOLVEMENT,
WITH FEATURES OF SPECIAL INTEREST.A CLINICAL LECTURE DELIVERED AT THE UNIVERSITY OF DENVER,
March 21, 1894.

By E. R. AXTELL, M. D.,

DENVER, COLO.,
PROFESSOR OF HISTOLOGY AND BACTERIOLOGY AND CLINICAL LECTURER
IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF DENVER,
NEUROLOGIST TO THE DEACONESS HOME HOSPITAL,
PATHOLOGIST TO ST. LUKE'S AND TO THE ARAPAHO COUNTY HOSPITALS.

GENTLEMEN: With the great array of pulmonary tubercular cases we see here, the subject must certainly tire some of you. So often repeated is the same old story of cough, pain in the chest, and emaciation—apparently the three cardinal signs of the laity in their diagnosis of consumption, and which certainly are of great value even to us—that the story loses some of its freshness, and unless we have the proper spirit of study it becomes decidedly irksome.

That I may not weary you, I have selected four especially interesting cases, each of which presents some one or more features that will be worthy of a few words. One does not appreciate the reputation that Colorado enjoys as a health resort until he has been connected with a clinic like this for some months. When we see so many of the poor seeking this climate for pulmonary diseases the question of how did they hear of its advantages is hard to answer. When we learn further that the majority of our tubercular patients here are foreigners we are also perplexed.

I shall say but few words to you upon the subject proper of pulmonary tuberculosis. I often wonder if there is anything more to be said. It has been classically studied, and to-day its literature does not need rewriting as does the literature of tubercular meningitis, erysipelas, and gonorrhœa.

Let me present this case. His history when taken, December 23, 1893, was as follows:

Michael P., aged thirty-one years, Pennsylvania, railroader, married. He has been in Colorado four years.

Family History. Father and mother and one sister died of consumption in Pennsylvania. One sister died of cancer of the spine (the cancerous). One brother died in infancy. He has two sisters alive and well. Of grandparents nothing is known. Certainly this patient's family history alone is of interest.

Patient's History. Health when a child good. He had measles and mumps, but nothing else. He was then quite well up to five present trouble. This began two years ago, when without any apparent cause he developed a rectal abscess, which was opened at the end of six weeks, but which has never healed up. It was stop running for a few days, a small tightness will develop, it will then open and discharge for a short time yellow offensive matter, and again the circle is repeated. Occasionally he passes some wind through the opening.

A few weeks ago it stopped discharging altogether, and since then patient has experienced much pain and annoyance in and about the site of the old abscess.

Seven months ago, without cause, patient began coughing. In other words, the rectal abscess antedates the cough seventeen months. This is not the usual course. The rectal abscess usually complicates the pulmonary involvement.

During the past four months, from December 23, 1893, the bowels of this patient have been seriously constipated and he has had to take castor oil every other night. How would you like this? His digestion and appetite have also been poor.

During the past year the patient has lost thirty-two pounds in weight. Since his last abscess began he has suffered much with headache. He sleeps well. During the day he feels weak and tired. His mental condition is good. He coughs mostly in the morning and on retiring at night. The expectoration is thick and yellow. The examination of this shows a few tubercle bacilli. He gives no history of a pulmonary hemorrhage. At present his pulse is 126, his temperature 103.6° F. The physical examination reveals a brawny red swelling between the right tuber ischii and the anal opening. Near the anus is a small pimpled elevation, the external fistulous opening which occasionally discharges pus. There is no fluctuation now in the brawny mass. The introduction of a probe, with a little force, into the pimpled elevation is followed by the discharge of some whitish-yellow offensive pus, with much relief to the sense of tightness which had previously existed.

The examination of the lungs shows the apices free, but involvement of the left lower base anteriorly and laterally, this part giving us a high-pitched percussion note, bronchophony, bronchial breathing, and subcrepitant râles.

The involvement of this area by a tubercular process is of interest because of its rarity.

You have seen so many apices involved by tuberculosis that a case where pulmonary phthisis exists and yet the apices are clear must be of interest.

An operation was advised for this patient's rectal abscess. He left the clinic only to return on January 15th of this year with the statement that he had on the previous day coughed up half a teaspoonful of blood. This thoroughly alarmed the patient, and he asked to have the operation done at once. I declined to do it until the bleeding point in his left lung had had time to become well sealed.

On February 1st of this year I operated on him. A number of you saw the operation. Three large suppurating tracts were opened, scraped, and allowed to granulate up from the bottom. The internal opening of the abscess could not be found, and the director was simply pushed through the bowel.

Chloroform was given him, and it caused no pulmonary or bronchial irritation.

To-day, March 21st, I present him to you again. His pulse is now in his temperature is normal. He has gained six pounds since the operation, and he feels better than he has for a year. . . . As you see, the entire cut has healed, and there are no evidences of new tracts. The bowels move without medicine every other day. He eats well and sleeps well. He states that the "chance" which he had in the left chest didn't cost one third of what it was, and that his cough is almost well.

Certainly the result here is of interest. Remember that what your patients want are results. Your reputation depends largely upon your results. I am not infatuated from selling, however, that the most secure results depend upon diagnosis.

I have an apology to offer you concerning my presentation

this case. From carelessness and hurry I failed to examine the pus of the rectal abscess for the bacillus of tubercle. It was a serious omission and will not occur in my next case. Whether this abscess was tubercular or not, it was poisoning the patient, keeping his temperature elevated and his life processes at a low ebb—sufficiently so that during its continuance his lung trouble, which had made a start, had spread with much rapidity.

Another abscess may develop here if the first was tubercular, but the treatment will be the same as has been pursued.

This next patient is an Italian :

He is twenty-two years of age and is a clerk. He came to Colorado fifteen days ago from New York city. His history, briefly told, is as follows: The only consumption in the family was in a brother, who died after a sickness of a year and a half. He was always strong and well up to six or seven years ago, when he began going with fast women and contracted several sores on his penis. From that time he has had poor health, although he has had no eruption, no sore throat, no sores in the mouth. Two weeks ago he noticed his hair dropping out, and it is still falling out badly.

His present pulmonary trouble began three months and a half ago. He took a bad cold during a carousal, and began coughing and having a little fever. His cough got progressively worse, and on December 20, 1893, a month after his cold began, he had a slight pulmonary hæmorrhage. On December 23d he had another one, which was quite profuse. He spat up fully two glassfuls of blood. He got it stopped, however, after being in bed five days. Since that time his cough has continued. At present he coughs most in the morning and at night. The expectoration is whitish-yellow and, on examination, shows no bacilli of tubercle.

His pulse is 96 and his temperature is normal. He has no shortness of breath, except on exertion. The physical examination of his chest shows the left apex involved down to the lower level of the first rib, there being above this dullness, increased vocal fremitus, mucous râles, bronchophony, and bronchial breathing. The right apex gives us a rough and prolonged expiration.

This young man we will now excuse. He did so well in the fifteen days after coming here and before I saw him that I did not believe any active medication was needed for his lungs. As his hair was coming out, I prescribed for him a stimulating hair wash.

A few months ago Mr. C. L. Ford, of this city, a druggist of well-known integrity and ability, after seeing two or three of my prescriptions calling for the syrup of hydriodic acid, stated to me that it was his opinion that this syrup was of no value, and that when I had an opportunity he would agree to furnish this syrup in any quantity I wished, provided I would use it in large doses.

The gentleman who has just excused was made the subject of a test. He has used two or three parts of the syrup, and has pronounced it of no value, and is now using a better remedy and actually has got out of the rattled group on his chest.

He is a most interesting case, and I shall at the present time suspend the case, and I have been for several months. Yet he has not yet got out of the rattled group on his chest. He is a most interesting case, and I shall at the present time suspend the case, and I have been for several months. Yet he has not yet got out of the rattled group on his chest.

movements, no coryza, no salivation, no disturbed intellect or vision, no ophthalmia, no cutaneous eruption, no emaciation, as is reported after the prolonged use of iodine.

This might be overlooked, but the dropping out of the hair still continues. This I supposed to be a specific manifestation, and I expected it to stop after the prolonged use of iodine, but, unfortunately, our medicine has had but little influence on this condition.

I shall still continue the use of this syrup in the case and shall press it further.

This trial has certainly lessened my faith in its value.

I have now but two more cases to present to you, and then just a few words on treatment.

Mr. A. M., aged thirty-eight years. He was born in Russia. He is a single man and his occupation is peddling. He comes to us complaining of a cough of two years and a half duration. The family history is good. There is not a single case of pulmonary consumption in the family. He states that he was always strong and well up to his present trouble, and that positively he was never sick a day before his cough began. He denies syphilis. He left London, England, perfectly well in July, 1892. He took a steerage passage and came over to this country in eight days. Among the passengers were many consumptives.

Just before leaving the ship he noticed that without cause he began coughing. This continued and has continued up to the present time. With the cough, after a few months, he had dyspnoea and diarrhoea and night sweats, and once or twice he saw some little blood in his expectoration. Before coming to Colorado he lost twenty pounds in weight.

When he came to Colorado, nineteen months ago, he coughed day and night, and he could not walk two blocks. He spat up much yellow and heavy mucus, and he had much pain in his chest. Since his arrival here he has gained twenty pounds in weight and his cough has lessened a great deal. As a rule, he coughs most in the morning and on retiring at night. He still expectorates much thick whitish phlegm. I find his pulse is now 96 and his temperature 98.5° F.

The physical examination of this man's chest gives rather a negative result. At the right apex we get prolonged expiration, with the vesicular sound being replaced by bronchial breathing. This condition persists down to the nipple. The left apex is clear and nowhere in his chest do I find a single râle.

I finished the examination of his sputa this morning and I found a great many tubercular bacilli in every field. He has here a tubercular infiltration of his right lung. It is very dry, as it is apt to be in Colorado. I have seen many cases of pronounced tubercular disease of the lungs come to Colorado with a chest full of bubbling and mucous râles, which would dry out and largely disappear as if by magic under the influence of this wonderful climate. Dry catarrhal pneumonia in children is another special feature of this dry region.

This case is one of special interest to me. I labeled it in my case book "shipboard infection." Possibly this is not right, but it does seem so. If you or I were to visit the leper colony on the Sandwich Islands and soon after, if possible, be attacked with leprosy, we should certainly be right in attributing it to our visit among the lepers. This man, a perfectly well man, entered a colony of tubercular persons under the most favorable conditions for infection. It is as if he had been made to inhale dried tubercular sputa for eight days. Certainly the germs fell on good soil. The

body temperature suits them; they thrive on blood serum. Something made him cough, something has kept that cough up. To-day I find the bacillus of tubercle in large numbers in his sputa.

I have not asked for the period of incubation. Why should it be long when it first acts locally? I have had many a "corpse tubercle" develop on my finger in from one to four days. Why can it not act equally soon in the delicate tissue of this man's lung?

I see the process developing in this way: The tubercular germs were carried by the air currents to the right apex. They were deposited on the epithelial cells lining the air vesicles. The epithelial cell felt the contact of its enemy. It proliferated. Two cells of epithelium now took the place of one, but the bacillus of tubercle was not idle. In its slow, deliberate, and dignified manner many enemies had taken the place of the one. More epithelial cells accumulated. More bacilli of tubercle were produced. The vaso-motor nerves then received a call of alarm. The leucocytes hastened to their rescue. They destroyed many of the enemy and many of them in turn lost their lives. The battle was to the strong, however; the bacilli survived. The first step of a catarrhal pneumonia was now present. This patient began to cough. Very soon, indeed, did the system in general respond to the invasion of the bacillus of tubercle. His subsequent history shows that his infection was tubercular from the start. In a month or so he had, in his own words, "a bad cough, with a great deal of spitting and all the signs of consumption; trouble in getting breath, diarrhœa, and night sweats."

His trouble still exists. Yet Colorado has done much for him. This is an old story with us all. Not a day's clinic goes by that we do not have the opportunity of seeing the benefit of our sunshine, our dry atmosphere, and our bracing and invigorating climate. This patient has gained twenty pounds since his arrival here nineteen months ago, and whereas he had not been able to walk before he came here, he is now able to be at his work.

He comes to us now for an exacerbation of his old trouble, due, as he says, to a fresh cold. Treatment will be given him.

Now for our last case—a case of equal interest to those just shown you.

Frank G., aged twenty-six years, Russian, cigar maker, married, has been in Colorado for two years. He comes to us with pulmonary trouble of four years' duration.

The family history is good. The father died of cancer of the stomach. There is no pulmonary trouble in any of the relations.

The patient enjoyed the very best of health up to his present trouble. He has never been sick, his habits have been good, and he has never had appetite.

Four years ago, without cause, without a previous cough, without any stage of croup, he suddenly coughed and began bringing up blood. The blood was not copious, and ceased. He had more than a plot of blood. After three or four and felt better, some months later he coughed. He was in bed for some three weeks because of bad colds. Then he came out, but he began coughing again, and he had a bad cold and cough again.

He went to Canada, but his cough continued. He picked up at first, and then began going down. He then came to Colorado. Since coming his cough has continued, and he does not believe that physically he is any better than when he came. He comes to us now for absolute loss of appetite or anorexia. He tells us that he could go for days or a week without eating a mouthful or without experiencing hunger. He has no nausea, no vomiting, no pain. The bowels are regular, but the stools are small. He forces himself to drink coffee and milk several times a day.

The physical examination of this patient shows some disseminated consolidation over the base of the left lung and a slight involvement of the right apex, made evident by percussion and auscultation. His heart's area and sounds are normal, and there are no evidences of a thoracic aneurysm. The examination of his sputa shows no bacilli of tubercle, but the array of air micro-organisms present in his recent expectoration is remarkable. I believe I can unhesitatingly pronounce this case tubercular, even though the examination of the sputa reveals no bacilli. Remember, the absence of the bacilli of tubercle in sputa is of far less value than their presence.

This case is interesting because of the negative history of trouble before his pulmonary hæmorrhage, and it is now of interest because of the absolute anorexia which this patient has. A pulmonary hæmorrhage is not always tubercular. This point ought to be impressed on you. Let me enumerate some of the remote causes of a hæmorrhage from the lungs: Chronic arterial or venous hyperæmia may cause bleeding from the lungs; some obscure vascular degenerative changes incident to depraved blood states, aneurysm, amyloid, fatty, and syphilitic degeneration of the pulmonary arteries or veins may all cause hæmoptysis; then again it may be vicarious to a menstrual or hæmorrhoidal flux; but in the overwhelming majority of cases the bleeding is due to a tubercular degeneration of the tunica intima and media of some one or more vessels, with which process inflammation of course exists.

The tubercular inflammation here, which after exclusion was no doubt the cause of his hæmorrhage, must have been very localized and very slight. He had no cough, no evidences at all of any pulmonary involvement before the hæmorrhage. Let us learn one thing from the case at least, and that is that a cough is sometimes absent when serious pulmonary trouble exists.

How to account for his present state of anorexia is more difficult. We do not know the conditions of life which surround this man, we do not know his cares and worries. We see him here slightly anæmic. We know that anæmia is sometimes responsible for anorexia. But in many cases of this kind the secretion of the various digestive juices is poor in quantity and quality and the stomach is not prepared to take care of food, and hence there is no call for it. It is more than probable that such is the condition here. To treat it we need to grow the digestive drugs which will first increase the stomacheic and hepatic secretions. I prescribe for him three capsules to increase the hepatic secretion: Eno's fruit, gr. i; podophyllin, gr. $\frac{1}{16}$; calomel, gr. $\frac{1}{32}$; alkali, gr. $\frac{1}{2}$. To increase the secretion of the hydrochloric acid of the gastric process, that is the stomach proper, I order for him a mild alkali, such as sodium bicarbonate, gr. i.

But of most importance in the treatment of all our tubercular cases is creosote.

Creosote is obtained by the distillation of beech-wood tar. It is allied to carbolic acid, in that carbolic acid is distilled from coal tar. Creosote is a compound body and consists of such compounds as guaiacol, creosol, kresnyl, phloryl, and phenyl alcohol. You are all familiar with its appearance, and certainly with its odor.

In the use of any remedy in this dire disease, in which too much medicine has always been given, we want clear proofs of its value, either clinically or theoretically. In creosote we have both. It was first used in 1830 with success in chronic pulmonary diseases, but not until 1887 and 1888 did it have the revival which it now enjoys. Professor Julius Sommerbrodt, of Breslau, Prussia, is to be thanked for its present extensive use. He has reviewed some five thousand cases of tuberculosis in which creosote was used, and his statement is to the effect that definite recovery has been attained in a larger proportion of such cases by its use than by any other method of treatment, and that in the great majority of cases decided benefit could be traced to its use.

Our clinic could add several hundred of "improved cases" to his large list. Not once but many times have we been able to see the fever diminish, the night sweats disappear, cough and expectoration lessen, and the general health of the patient improve under the benign influence of creosote.

The method of its administration which we use at our clinic here is about as follows: We begin with three minims of the drug three times a day and increase the dose one minim each day until we reach the point of intolerance. We then continue the use of the drug, in as large a dose as the patient can stand, for an indefinite period, always directing it to be taken after meals.

In the majority of our cases we have the drug taken in liquor, milk, or malt extract. In the use of creosote we must use large doses to get the best of results. After ingestion it is probably in part changed, in part not absorbed, and in part quickly excreted. Many of our patients here are taking very large doses.

The use of large doses is frequently attended with much gastric disturbance even though we give it cautiously. Some patients can take but very little of it. The chemists have now devised for us a non-irritating preparation of creosote which will certainly prove of great service in these cases. I refer to creosote carbonate, or creosote combined with carbonic acid. It is non-irritant and non-poisonous and contains ninety-two per cent. of beech-wood creosote. It is a clear, neutral oily liquid, of a slight taste and an agreeable odor, and agrees with the most sensitive stomach. The dose is from one to four drachms daily, given in divided doses. If it proves of the same value as creosote, and I believe it will, it ought to replace creosote in every case. My experience with the use of it as yet has been incomplete to allow me to make even a fair report.

Now just a few words to you upon the theory of the way in which creosote is supposed to act. Professor Sommer-

brodt based his usage of large doses of creosote in tuberculosis upon the researches of Guttman, who found that the bacillus of tuberculosis could not live in a solution of creosote of greater strength than one part in four thousand. Now, if twenty grains of creosote could be introduced into the blood of an ordinary man, it would represent a solution of such a strength. It is considered not impossible to produce such a condition. With this present, the beneficial effect of the use of creosote would not be difficult to explain. The bacillus of tubercle living upon the blood serum would soon be destroyed and the process in the lungs would quickly be reduced to a simple catarrhal affair.

But creosote as creosote has not been found in the blood of patients taking the drug. This looks as if it might be a serious objection to the theory of Sommerbrodt; but as it is eliminated from the kidneys and lungs as creosote, it must circulate in the blood. It is supposed to enter the blood in combination with certain albuminoids in the blood and to form compounds which still possess the properties of the crude drug.

But how creosote acts in smaller doses and in what way it produces its beneficial effects is as yet speculative.

Seifert and Hoelschler have recently formulated the theory, which is now very generally accepted, that the toxic albumins which result from the presence of the bacillus of tubercle in the body, and by their presence produce the fever, the night sweats, and the other tubercular manifestations, are neutralized by the creosote albuminoids, or that the presence of these renders the toxic products stable and therefore non-toxic, and further that they assist in their elimination.

It is very probable that this theory is the right one. I have seen benefit result from five drops of creosote three times a day.

Creosote, while a compound body, contains about seventy-five per cent. of guaiacol, and because of this guaiacol has been called the active principle of creosote; but personally I have not observed at our clinic here the same benefit from guaiacol that I have from the use of creosote.

I shall continue to use creosote or its carbonate. Whether I shall use it next year or the year after I do not know; but whatever drug may come or go, there are three things that we shall use for pulmonary tuberculosis many years from to-day, and even when all drugs fail us they will still be worth reliance—I mean careful attention to diet, fresh air, and sunshine.

Respiration versus Nourishment.—"What's the patient's temperature this evening, nurse?" "I've just charted it," returned the nurse, "and I've taken it and the pulse and respiration every two hours." The doctor looked surprised, but silently held out his hand for the neatly marked record. "What nourishment have you given?" he asked, after looking at it. The nurse seemed startled. "I'm afraid I can't tell you. I know she had some milk once, and since then some beef tea, but I did not remember about the nourishment this evening. I was so anxious to get the pulse and respiration right." "Then perhaps I had better attend at feeding times, and see to the nourishment myself," retorted the old-fashioned doctor sharply. —Hospital.

Original Communications.

TUBERCULAR DISEASE
OF THE SHOULDER JOINT.*

By W. R. TOWNSEND, A. M., M. D.

TUBERCULAR disease of the shoulder, as compared with tubercular disease of the other large joints, is a rare affection. The rôle that traumatism play in the development of these conditions may partially account for its rarity, but the anatomical reason is not perfectly clear why the head of the humerus should be so seldom diseased as compared with the head of the femur. From its construction the joint is well protected, but traumatism do occur yet are seldom followed by disease.

The relative frequency is variously given. Crocq, quoted by Ollier, saw one case in a hundred and forty. Billroth, out of 1,996 cases of joint tuberculosis, had 23 examples in which the shoulder was involved. Hubbard quotes the *Guy's Hospital Reports* as giving less than one per cent. of disease of the shoulder as compared with affections of the other joints. At the Hospital for the Relief of the Ruptured and Crippled, New York, from 1889 to 1893 inclusive, 3,244 cases of bone and joint tuberculosis were noted, and of this number 21 were of the shoulder joint.

Of these twenty-one cases eleven were in males and ten in females. The average age at the time of the first visit was twelve years, the youngest patient being three years and three months, the oldest thirty-five years old; ten were under ten years of age, seven from ten to twenty years, and four were over twenty. The disease had existed on an average one year and nine months, the longest duration being ten years, the shortest three months, showing the average age when the disease first appeared to be about ten.

These statistics are very different from those of Mondan and Audry,† who give the average age as twenty-four years and seven months, but think this is too high, and that twenty-three would be more nearly correct. Their oldest patient was sixty, and the disease began at the age of fifty-five; their youngest, eight years. They conclude that the disease is less common in early than in adult life, but our figures would prove the contrary. Their figures do not necessarily prove this, because they only admit adults to their clinic; but at the Hospital for Ruptured and Crippled no distinction is made as to age.

In adult life as in childhood most patients know of no cause for the disease, and in the cases forming the basis of this paper in only two was a cause given, and in each instance a fall on the joint had preceded the disease. In five there existed tubercular lesions of other joints. One had Pott's disease, two had hip disease, and two had disease of the knee, but in every instance the shoulder was the first joint affected. In the cases of Mondan and Audry ten out of forty patients had had bone, pyæmia or other source of pri-

mary tuberculosis, and two had disease of other joints in addition to the shoulder.

The ætiology of the disease is indicated by the title, and as in most other forms of joint tuberculosis the primary lesion in the body is more apt to be in the glands about the bronchi or lungs, or in the latter, than in the synovial tissues or bone. At least, this is the generally accepted opinion to-day. The bacilli of tuberculosis are the primary cause of the disease; secondarily, traumatism may have an influence or may render a joint less able to resist the tubercular process. Heredity is no longer considered a potent factor.

The pathology does not vary from that of tubercular disease of other joints, and as the results of thirty-two excisions practiced by Ollier and his colleagues, all done on adults or patients near adult life, in their valuable article on the subject Mondan and Audry report the following: The starting point of the disease was in twenty-nine cases in the bone, in one doubtful, and in three clearly synovial. Of these cases, in twenty-three the disease originated in the humerus, in four in both the scapula and the humerus, and in one in the scapula. In ten patients there was one lesion in the humerus, in nineteen the lesions were multiple. In twenty-two cases it was in the epiphysis, juxta-epiphyseal in five, and both in the other five.

The anatomical head and neck were the site in twenty-six, twelve in the neck and fourteen in the head of the bone.

The disease was, as a rule, peripheral rather than central, and was generally just beneath the cartilage, and several ill-defined cheesy masses were generally found; rarely was a distinct, well defined focus seen. In addition to these cheesy masses, in twelve excisions sequestra were found, seven of the humerus, four of the scapula, and one of doubtful origin. In these cases the bone may be very hard and different from most sequestra found in necrosis from ordinary causes. A condition exists which Ollier speaks of as "paratuberculose," really a new process, the result of the inflammation. In one of his cases the sequestrum had probably been in the joint for eleven years, yet the edges were very little softened. In the three cases reported in this paper in all the focus was situated in the head of the humerus.

The symptoms of the disease came on, as a rule, very slowly, although they may come on rapidly, abscesses occur, and destruction of the joint follow with more or less complete ankylosis. In childhood the symptoms come on, as a rule, more slowly than in adult life, and are less apt to be severe and terminate in abscess.

The symptoms in disease of the shoulder are essentially local and local. The first are those common to tuberculosis or inflammation, and usually very insidious, a slight or moderate change in the temperature, a slight elevation in the evening with a return to the normal or nearly to it in the morning. Of course, when general tuberculosis is present the constitutional symptoms are more marked. In such cases they may be entirely absent. The symptoms referable to the disease—arthralgia, atrophy, tenderness, atrophy, change in the position of the part, loss of func-

* Read at the eighth annual meeting of the New American Orthopaedic Association.

† Mondan and Audry. *Les tuberculoses articulaires. Arch. chirurgie*, 1893, 1894.

tion, glandular enlargements, usually in the axilla, shortening of the arm, abscesses, and ankylosis.

The pain is usually the first symptom noted and may very greatly. In some it is only present when joint motions are made, and occasionally even only when the motions are severe or excessive. Again, it may be much worse at night than by day and elicited only by deep pressure or by the slightest touch. It is usually referred to the shoulder joint, but may be complained of at the elbow or in the muscles in front of or behind the joint. In some rare instances the disease may progress steadily and only a sense of fatigue be complained of after using the limb. In the majority of cases, however, the pain is a serious symptom, is usually worse at night, and may require the use of anodynes for its relief. In one instance reported by Ollier an excision was performed simply for the relief of a most violent and intractable pain in the joint.

In this joint, as in all others affected by chronic disease, reflex muscular spasm is the most important symptom. Whenever present it is a positive sign of disease. It appears early and remains throughout. The spasm is most marked in the deltoid and is most easily elicited by abduction of the arm. As the circumflex nerve supplies both this muscle and the joint, movements of flexion and extension, in both of which fibers of the deltoid also come into play, are in condition of spasm as soon as abduction. Adduction and rotation are less apt to be painful and limited by spasm; but as the joint is supplied by the same nerves which supply the muscles about it, in well-marked cases all motions are limited.

The atrophy is an early symptom and is most marked in the deltoid; the wasting may be very rapid and extreme, suggestive even of paralysis. All the muscles about the joint decrease in size, even those posteriorly on the scapula and in front on the arm and forearm. Cases have been reported also of atrophy of the pectorals. The length of the humerus is affected, and in a case reported in this paper the forearm was also shortened. In all cases examined the length of the arm on the affected side was shorter than the healthy limb. This shortening varies from a quarter of an inch to several inches. No change has been noted in the hands, but it is reasonable to suppose that they might also be smaller. Disuse later on helps to increase the atrophy. If the upper epiphysis of the humerus has been removed before ossification is complete the shortening might be excessive, but I have not had the opportunity of measuring any such case or finding the record of one. I have not found notes of any case where the atrophy by diminishing the support to the joint has permitted a dislocation to occur.

As a result of the atrophy there are marked changes in the contour of the part about the joint. By diminishing the size of the muscles the bony prominences are more clearly brought out. The acromion projects, a depression is seen beneath it, the coracoid may be made visible, and the head of the humerus may be seen in front of the joint. The paralysis of the deltoid weakens the support about the articulation, and even where no head is present the humer-

al head may be lowered, the weight of the arm pulling it away from the glenoid cavity.

Secondary effects may be produced which also change the contour of the parts: the sternal end of the clavicle may be more or less completely dislocated upward from a pulling down of its acromial end and a lateral curvature of the spine result from a change at the shoulder. Looked at posteriorly, the atrophy of the scapular muscles brings into prominence this bone, and when ankylosis has occurred displacement of the scapula also results and its inner angle is made more prominent.

The loss of function due to muscular spasm primarily and later on to ankylosis varies greatly. It may be most limited when due to spasm, for the pain and fear of pain will hinder free motion. Abduction is most affected, then flexion and extension, lastly adduction and rotation. Circumduction, being due to a combination of the others, is entirely suspended. After ankylosis has occurred the mobility of the scapula, which mobility is in such cases increased, renders the loss of function less than it otherwise would be. In examining patients who have had this disease we must test the motions of the arm and shoulder joint separate and distinct from those of the forearm. Many have good use of the forearm and no disability, so long as motions of abduction of the arm are not undertaken, yet their disability is complete in that particular.

Ankylosis, partial or complete, is the usual termination of the disease. Partial ankylosis is generally fibrous in character and complete ankylosis bony. As a rule this union of the humeral head to the glenoid cavity limits the ability to raise the arm from the side to about one third to one fourth the normal. Raising the arm above the horizontal or beyond 90° is accomplished by the trapezius, and is usually impossible when ankylosis exists; by the power of the trapezius and the mobility of the scapula, however, in some the arm may be raised to the horizontal, and this fact diminishes somewhat the disability. All movements requiring great freedom of the arm are therefore seriously interfered with. The patients are often unable to raise the hand to the mouth or head, thus rendering them incapable of feeding or properly dressing themselves. They may or may not be able to lift much even with the arm extended, and the power to hold up much weight when the arm is abducted is in all cases very much diminished.

The loss of function is thus seen to be a serious matter in many cases, and only such work can be done in severe cases as requires but little force and such as can be supplied by the forearm alone. When the patients can get the hand to the head, feed and dress themselves, the condition is not serious and the disability often but little felt.

In most cases of tubercular disease of the shoulder, abscesses occur sooner or later. Mondan and Audry found them in twenty-seven out of thirty-three patients. In all but one of the cases we have seen of many years' standing, abscesses either had existed or were present. They generally appear in front of the joint or below in the axilla. They may burrow down and appear upon the arm or on the chest, and in a case reported by Panas the abscess first came to the surface below the elbow. With the appear-

ance of the abscess the joint may appear swollen, and the increased size of the joint is more often due to this cause than to distention by synovial fluid. The abscesses rarely heal promptly, but leave sinuses which discharge for a varying number of months or years. In one of our cases the sinus has been discharging for two years. They may close and reopen a number of times before a final cure results.

The duration of the disease varies, but we may safely say that two or three years in favorable cases would nearly represent the average and a much longer time in the unfavorable. A not infrequent occurrence is to have the symptoms subside and then, either due to a traumatism or from some unknown cause, an exacerbation occurs and the symptoms may be very acute. Many such cases, save for the occurrence of abscess and other symptoms, would almost lead us to believe they were rheumatic. Relapses in perfectly cured cases, however, are rare.

From the close proximity of the glands in the axilla to the joint the former are usually enlarged when tuberculosis exists. The enlargement may subside with the disease or they may become cheesy or break down. They usually call for no local treatment.

The complications of the disease are those common to tubercular joint troubles, the most common being the involvement of another joint; but in our cases the shoulder was always the second, never the first, where the patient had several lesions. From its close proximity to the lungs pulmonary complications are frequent in adults. In children we can not speak positively on the subject, but as the bone lesion is rarely the primary one, the exact influence it may have on the production of the complications is not always perfectly clear or easy to estimate.

The diagnosis is a matter of great importance, and in typical cases is usually easy. The conditions oftenest mistaken for tubercular disease of the shoulder are rheumatic arthritis, paralysis of the deltoid from any cause, dislocation of the humerus, and osteomyelitis of the upper portion of the humerus.

In rheumatic arthritis in early life the frequency of occurrence of tubercular disease is important, as monoarticular rheumatism is comparatively rare, the rheumatic affections generally being found in several joints and may be accompanied with chorea and heart lesions. In rheumatic arthritis of adults there is usually a history of rheumatic pains in other joints as well as in the joint affected. In tubercular joint disease the onset is slow and insidious, in rheumatic arthritis more apt to be rapid and well marked. In tubercular disease of the shoulder atrophy is an early symptom, in rheumatic disease the pain is around the joint and swollen. Reflex muscular spasm is present in both, but most marked in the tubercular case. Glandular enlargement is common in the tubercular case in the thorax. The length of the disease and of the cure is shortened in the tubercular as compared with the rheumatic. The presence of pulmonary or other tubercular lesions may occasionally be of assistance in making a diagnosis. In tubercular disease the pain is usually severe at night, in rheumatic and the contrary is the case. Heat and suppuration rarely attend the symptoms in the tubercular, usually do not occur there

matic. The so-called antirheumatic drugs may soon cure the rheumatic, generally have no effect on the tubercular. Abscesses are common in tuberculosis, rare in rheumatism. Constitutional symptoms are generally more marked in inflammatory rheumatism than in joint tuberculosis. A careful study of the history and of the above-mentioned differences in symptoms usually makes the diagnosis an easy matter.

From paralysis of either central or peripheral origin, the history, the character of the attack, the electrical examination, the absence of glandular enlargements and of abscesses, the lack of pain, the loose or flail joint as compared with the one held rigid by muscular spasm or ankylosis, should make mistakes between these two diseases almost impossible.

A careful anatomical examination, the disability following immediately after a fall, absence of reflex spasm, and other symptoms of joint disease, ought easily to exclude dislocation of the humerus.

In osteomyelitis the history, rapid onset, severe constitutional symptoms, swelling instead of atrophy, and careful examination of the affected bone will rarely cause any doubt as to the true nature of the lesion we have to deal with.

The prognosis of the disease should be considered from two standpoints—the effect on the general constitution and locally on the joint. On the general health it is doubtful if disease of the shoulder is more serious than disease of the other large joints; a certain number of patients die from tubercular meningitis or pulmonary complications, but it is very difficult to say in most cases that the cause of death may not have been from an infection of tubercular material from some other source than the diseased shoulder. In adults, if abscesses have formed and sepsis occurred, this may cause death, but in childhood such an occurrence is rare. The prognosis is worse in adults than in children, for bone tuberculosis is more apt to terminate favorably in the latter and the complications are less frequent. On the joint itself the prognosis is bad. Many cases end in ankylosis and practical destruction of the articulation; others have more or less firm ankylosis without much destruction of bone and but very rarely is a good functional result found.

The slow and insidious onset of this disease and the fact that it is so often mistaken for a rheumatic affection and little attention, therefore, paid to it, account for the statement previously made that in twenty-one cases seen by the author the disease had existed on an average a year and four months before treatment was begun. This fact must also be taken into account when we consider the results, for the majority already had ankylosis, either partial or complete when first seen. A few cases were successfully and conservatively treated at first, but this was so greatly opposed that it is no use, as we see, that such limited treatment was really given a fair trial; but careful reading and close examination of some patients who it may be supposed had been subjected to careful conservative treatment, led to the belief that ankylosis was so incomplete as to make joint surgery and treatment. Two cases were available as examples of the latter result in patients of thirty or thirty-five years, or less of age, by a

simple sling, or in the second method to immobilize the joint and make extension by adhesive strips applied to the arm, the counter-pressure being by a crutch in the axilla. To put the patient in bed and make traction by weight and pulley would not recommend itself to many. In all the cases treated by immobilization the pain and spasm were relieved by the support. In Cases IV and V of this paper the early treatment was improper and of a nature to produce ankylosis. The fallacy that complete immobilization of tubercular joints produces ankylosis is a theory of the past. That motion at the shoulder may occasionally be secured by *brisement forcé* in the rheumatic is not under consideration, but in tubercular disease of the shoulder all agree that joint motion should be prevented. After the acute symptoms have subsided, electricity may be used to stimulate the muscles, but massage should not be employed in and about the joint for fear of starting up the disease again. Any violent motion, active or passive, is to be avoided.

The question of operation in disease of the shoulder joint has until very recently been much influenced by the fact that excision has been considered a very dangerous procedure. The statistics of Gurlt, Otis, and Culbertson have been quoted by all writers on the subject, but we must remember they were all made before the days of aseptic and antiseptic surgery and have really very little value now. Even the statistics of Sack* and König,† made in 1880, would be, no doubt, improved were they to report again to-day. In considering the subject of an operation several questions must be asked and answered:

1. Are operations on the shoulder justifiable in early life?
2. If so, what should be the operation?
3. What are the dangers of the operation?
4. Should adults be subjected to operative rather than mechanical treatment?
5. Should operations be undertaken on patients suffering from general tuberculosis?

In answer to the first question we will say that, as the growth of the humerus is largely from the upper epiphysis, to remove this by a complete excision before the eighteenth year would much shorten the arm, and in only exceptional cases would such an operation be justifiable. Operations that do not remove too much tissue and thus prevent growth are justifiable and may, by completely removing all the tubercular disease, stop its progress and leave a useful joint. By partial excisions we should have a small mortality list, and this should especially be the case when the operation consists simply in the removal of part of the head of the humerus. The statement of Culbertson,‡ quoted by Bradford and Barrett,* as to partial excisions being more dangerous than total, is misleading. The nearer we approach the trunk the greater the danger is, and to remove half an inch of the epiphysis more serious than

to remove six inches of the humerus; we should therefore, if possible, confine our operations to the latter bone; in fact, either on children or adults, very few typical excisions of the shoulder are done, the rule being only to remove the diseased tissue and endeavor to get a movable joint as the result.

The dangers of the operation are sepsis and death, and the dissemination of the tubercular material with the production of tubercular meningitis or pulmonary tuberculosis. The danger from sepsis is still present despite improved technique, but, with proper precautions, should be very small and not deter us from operating. The same is true of the danger of producing tubercular meningitis, although in one of the cases here reported a death followed from this complication. The danger is a real one, but just how often meningitis occurs after operations on tubercular patients it is impossible to say. The statement of König, for instance, that in eighteen cases of acute tuberculosis in his practice, sixteen followed operation, is of value; but we ought to know how many cases of acute tuberculosis had developed in those with joint symptoms in whom no operation had been done before we conclude the percentage of such complications is really large. Cheye, in the *Lancet* for 1890, reports two similar cases to the one reported in this paper, and it would be very interesting to know if such a complication is more frequent after operations on the shoulder joint than after operations on the other joints of the body.

That these complications do occur would seem to be an argument against operations simply for the sake of preventing general tuberculosis, as some have advised. In adults the question is somewhat different than in children, for the tendency to pulmonary complications seems greater, and the drain from long-continued suppuration is, as a rule, much more serious in its results. The general advice, then, would be to remove the disease as early as possible in adults. If a partial operation can be done, so much the better. Many such cases are reported, a very interesting one on a boy of fourteen years having been done by Davies Colley* in Guy's Hospital, where a part of the humeral head, the great tuberosity, and adjoining articular surface were removed and a perfect functional result followed.

Several inches of bone may be removed and the result be very satisfactory, as in the case reported by Hubbard,† where he removed four inches of the humerus, and a year and a half later there was only an inch and a half of shortening of the arm. The functional result was almost perfect.

Whether the operation be partial or complete, the subperiosteal method as devised by Ollier should be followed; the growth of the bone is permitted even after the removal of much tissue, and the wonderful results he reports in some cases could certainly not be duplicated by any other method of operation. In one case, after complete removal of the head of the humerus, a new head was formed, and drawings are shown of the portion removed and of the re-

* *Journal of Bone and Joint Surgery*, 1880, p. 171.

† *Journal of Bone and Joint Surgery*, 1880, p. 171.

‡ *Journal of Bone and Joint Surgery*, 1880, p. 171.

* *Journal of Bone and Joint Surgery*, 1880, p. 171.

† *Medical News*, April 14, 1888.

produced bone at the end of nine years.* In children, operate early, but do not remove the epiphysis and thus prevent growth of the limb.

In general, operations should not be undertaken where pulmonary tuberculosis is also present, but in some cases the improvement after operation is most marked, Ollier mentioning several where the hæmoptysis was entirely stopped or much decreased after an excision. In endeavoring to decide whether to subject such patients to operations we should, as far as possible, be guided by the fact whether the local condition or the constitutional one seems most responsible for the symptoms, never a very easy question to decide; but, when the shoulder is suppurating freely, is very painful, and the pulmonary symptoms slight, operations may be undertaken with a hope of relieving both the local and the constitutional signs.

The principal reason for advocating operative rather than mechanical treatment is that ankylosis more or less complete is the usual result after the latter, and in the arm freedom of movement is what we need, and after partial or complete excision this result may be obtained in most cases. The question is different at the hip and shoulder. At the hip after excision we want a firm support; ankylosis is preferable to a flail joint. A shortened leg much interferes with locomotion, but an arm slightly shortened and freely movable is preferable to a stiff one, although it may be several inches longer, and partial operations do not much diminish the length of the arm. We do not believe operations on the shoulder dangerous, as we reject the old statistics of pre-antiseptic days. The joint is easy of approach, and in a large majority of instances the disease is located in the head of the humerus and can thus be entirely removed. By partial operations and the subperiosteal method the growth of the limb should not be much affected.

In looking over the literature of the subject for the past few years I have found only one case of tubercular shoulder-joint disease reported by an American, and that was by Nathan Jacobson † of a boy aged three years and a half who had disease of the left shoulder. In this case an incision was made from the acromion to the surgical neck, and the diseased bone removed by a Volkman's procedure, leaving an opening through the entire thickness of the bone large enough to admit the index finger. Recovery was slow but the result almost perfect, there being half an inch shortening, and gliding on the part of the patient to carry the hand to the head.

The history of the following cases illustrates all types of the disease except those where the symptoms were so very rapidly and purely destructive that death occurred soon after onset to our personal notice.

CASE I. *Disease of the Right Shoulder in M. M.*—A female child, seven years and six months. Admitted to hospital May 10, 1894. *History.*—Symptoms gradual. At first pain in shoulder, afterwards increasing, always worse at night. When three years old there was a small lump on the shoulder, but it soon became

stiff and has so remained. For the past three months the pain has been very bad. At the time of admission the left humerus was nine inches and a half long; the right, eight inches and three quarters. Over the shoulder through the axilla on the right side was five inches and a half; on the left, six inches and a quarter. The circumference of the right arm was six inches; of the left, six inches and a quarter. The head of the humerus was held firmly in the glenoid cavity. No tenderness or pain present. No motion at the joint. The scapula and clavicle were normal. The arm hung by the side and could not be abducted. Elbow normal.

On May 24, 1890, under ether, an incision two inches long was made over the outer and anterior aspect of the joint down to the bone and through the periosteum. This was retracted and a drill introduced at the upper part of the surgical neck and made to pass into the head of the bone, which was found softened. This was thoroughly curetted, leaving only a small shell of bone, the major portion of the interior of the head being removed. The articular surface was not touched and the joint not entered. While under ether, before the scraping was done, motions of the arm were found to be free and no grating in the joint. The wound was packed with iodoform gauze, a plaster-of-Paris bandage applied, the arm being close to the body and the forearm at a right angle to the arm. The recovery was uneventful and she was discharged from the hospital July 7, 1890. At that time there was no pain and very little if any motion in the joint.

Examination, May 17, 1894.—General condition of patient very good. The arms hang naturally by the side. She can raise the right arm above her head and within twenty degrees of the left. Can raise the arm rapidly and strongly to the horizontal and uses both equally well. She can place the hand behind the back and in the opposite axilla and uses it freely in jumping the rope, in which exercise circumduction comes into play.

The length of the right humerus is ten inches and a half; the left, eleven inches and a quarter; the length of the arm, forearm, and hand from tip of acromion to tip of middle finger on the right side is twenty-three inches and a half; on the left, twenty-five inches. The circumference of the right arm at the axilla is six inches and three quarters; of the left, seven inches and a quarter. Over the shoulder and through the axilla on the right side is nine inches and a half; on the left, ten inches and a half.

CASE II. *Disease of the Right Shoulder in M. M.*—W. M., aged six years and a half. Admitted to hospital January 6, 1894. *History.*—Symptoms gradual. Family history negative. At sixteen months on the 10th of February, 1891, a small lump on the right shoulder, the size of a pea, was noticed and could only lift it to the horizontal position. All motions of the joint were painful. The general health failed, he became pale, lost weight, and at sixteen he succumbed to *Rift disease*. At that time the shoulder was found, on dissection, affected with *gouty disease*. There was no more progress of the *gouty disease*.

Examination, July 1.—Patient remarkably strong and plump. On the anterior aspect of the body, midway between the acromion and the nipple, is a tumorous mass. On the right shoulder,

measuring from the tip of the scapula to the tip of the acromion, is a small, rounded, and somewhat flattened mass, and the general health is good. The patient is well and happy. All the motions of the joint are free and the arm is held in the position of the right arm. The patient is well and happy. All the motions of the joint are free and the arm is held in the position of the right arm. The patient is well and happy. All the motions of the joint are free and the arm is held in the position of the right arm.

* *See also, "Tubercular Disease of the Shoulder Joint."*

† *See also, "Tubercular Disease of the Shoulder Joint."*

are packed with iodoform gauze and by March 12th all the sinuses have healed.

May 25th.—General condition good. Holds arm naturally by the side, can raise it half-way to the horizontal, can place the hand on his forehead and on opposite shoulder. There is no pain either on pressure or when he moves the arm.

From the tip of the acromion to the lower edge of the external condyle on the right side is six inches and a half; on the left, seven inches and a quarter. From the tip of the acromion to the tip of the middle finger on the right side is sixteen inches and three quarters; on the left, seventeen inches and a half. There is half an inch atrophy of the arm and the same of the forearm. Flexion and extension of the arm are about half the normal.

Case III. Disease of the Right Shoulder.—J. J., male, aged eleven years. Admitted to hospital October 1, 1890. Mother and father both dead of phthisis. Duration of disease unknown. Has had plaster of Paris applied to the shoulder, and the pain has been relieved by day but not by night. The right shoulder is lower than the left; there is marked atrophy of the deltoid, and the acromion is prominent. There is marked muscular spasm, pain, and tenderness. The lower angle of the right scapula is lower than that of the left. There is slight dorsal curvature in the dorsal region, convexity to the left. The right arm, from tip of acromion to tip of middle finger measures twenty-four inches and three quarters; the left, twenty-five inches and a half. The circumference of the right shoulder is twelve inches and a quarter; of the left, eleven inches and a quarter. The circumference of the right arm is five inches and seven eighths; of the left, six inches and five eighths. The right forearm, six inches and a half; the left, seven inches. The right wrist, four inches and three quarters; the left, five inches.

October 6th.—Under ether an incision was made two inches long over the head of the humerus. The head of the bone was found softened and was gouged out and a drainage-tube put in. There was some gelatinous material in the joint which was also cleaned out; the glenoid was not diseased. The arm was dressed in abduction of about twenty degrees.

20th.—A Knight spinal brace was applied with a crutch for the right arm, the idea being to gradually raise the arm from the side.

November 1st.—Patient is up and about the ward and improving nicely.

1st.—Complete loss of bowels, menses, and vomiting.

15th.—The cough is now incessant. Bowels constipated, pulse irregular, photophobia, irregular respirations, restlessness.

17th.—Delirious.

18th.—The patient has become completely delirious.

20th.—Delirious. Examination with ophthalmoscope shows the following:

The fundus continued and dark followed November 20th, 21st, 22nd, and 23rd after the cessation from tubercular meningitis. Artery deeply free from clots.

24th.—The patient died at 11 A.M. of tubercular meningitis. The lungs were congested. The heart was enlarged but not diseased. Spleen and kidneys normal and no evidence of tubercular infection. There was a large tubercular mass in the base of the spine, with some abscess wall, and the spinal cord was encased within them. There was a small amount of tubercular deposit. The ventricles were not diseased.

Liver.—The liver was fatty and a few nodules tubercular were scattered over its surface.

Chest.—Over the left chest were numerous dense fibrinous adhesions of long standing.

Right Lung.—At the apex was a small area of miliary tubercles surrounded by fibrous tissue; a few tubercles were scattered over its surface.

Left Lung.—Studded at apex with cheesy nodules. The collection of nodules is surrounded by a layer of chronic interstitial pneumonia which has about it a considerable area of recent tubercles; these are also scattered throughout the lower lobe. The lung shows evidences of an old phthisis with recent extension.

The bronchial glands were not diseased.

One kidney was normal, the other had several tubercles on its surface and a drop of pus in the pelvis.

Heart.—Normal.

Intestines.—Moderately congested.

Mesenteric Glands.—Normal.

Stomach.—Contracted; empty. Near the pylorus on the greater curvature are several ulcers a twelfth of an inch in diameter with reddened edges.

This is a very interesting case, for the meningitis may have been due to the dissemination in the general system of tuberculous material at the time of the operation.

In all these cases the operations were done by Dr. Gibney.

Case IV. Disease of the Left Shoulder.—L. L., female, aged twenty-four years. When fourteen years of age, in play had her arm given a pull which caused her some pain and was followed by lameness. She was examined at the time by Dr. Gibney and found to have an inch shortening, marked atrophy, pain on moving the joint, and a grating crepitation. Use of the arm, however slight, aggravated the pain, and she complained of being unable to rest at night. The muscles about the joint reacted perfectly to the faradaic current. A sling was employed without benefit. At the end of five months she was admitted to St. Luke's Hospital, and, under ether, the arm was freely moved in all directions. After this, daily passive motion was resorted to, and the failure to derive the benefit expected was attributed to the lack of vigor in carrying out the after-treatment and her desire to get home. In May, 1884, she could abduct the arm to an angle of a hundred and thirty-five degrees (about half normal); there was little rotation and very little tenderness. There was an inch and three quarters atrophy of the arm and an inch shortening. In 1892 she had an abscess in front of the joint which was opened, and the sinus still discharges. In 1893 she had another abscess and the same plan was followed, with the same result.

May 17, 1884.—General health fair. Has two discharging sinuses. Has no cough or symptoms of general tuberculosis. Works daily in a card factory and feeds a press with the left arm. The work really requires no motion at the shoulder, but is all done with the forearm. She can raise the arm half-way to the horizontal and can get the hand nearly to the median line of the back; can place it on her head and on the opposite shoulder. There is marked atrophy of the parts about the shoulder. The circumference of the right arm is ten inches; of the left, eight inches. From the tip of the acromion to the lower edge of the external condyle of the humerus is ten inches and three quarters on the right side and nine inches on the left. From the tip of the acromion to the tip of the middle finger on the right side is twenty-five inches, on the left, twenty-three inches and a quarter. She has occasional pains in the shoulder, but no serious trouble.

Case V. Disease of the Right Shoulder.—F. W., female, aged twenty-five years. The disease came on slowly and there was no cause given, but from childhood the arm had been

weak. Since 1880 she has been unable to get the hand to the head. In 1889 she had an abscess form in front of her joint which discharged for five weeks, then healed. Has had none since. Her early treatment, as described by Gibney,* was "active and passive motion, emollients, and electricity; these means failing, forcible movements under ether; subsequent passive motion; restifening of shoulder"; and the further note added, "seems to improve when not treated."

March 11, 1893.—General condition good; weighs a hundred and thirty pounds; works all day as saleslady; thinks she can lift as much with right as with left arm; can do no motions where the deltoid is needed. The ankylosis is complete, yet can place the hand on the head, but lowers the head a trifle in so doing. Can place hand on the opposite shoulder with the arm close to the body. Can not move the arm more than three inches from the body as measured at the elbow. The right arm, measured from the tip of the acromion to the tip of the middle finger, is twenty-six inches long; the left, twenty-seven. The circumference of the right arm is nine inches; of the left, ten inches; of the right forearm, eight inches and a quarter; of the left, eight inches and a half.

CASE VI. Disease of the Right Shoulder and Right Knee.—A. W., female, aged twelve years. Seen at hospital April 19, 1892. Family history negative. The knee disease began when she was two years old, the shoulder when eight years. She had marked atrophy of the shoulder, moderate spasm and partial ankylosis. Had pain at night in the shoulder. A sling was recommended, but never worn.

May 15, 1894.—General condition good. No signs of abscess. No joint tenderness. Can place the hand on top of the head and behind the back, but can not raise the arm to a horizontal position. Joint is painful on pressure, and she does not use it with the same freedom as the left. There is an inch atrophy of the arm and two inches shortening as measured from the tip of the acromion to the tip of middle finger.

CASE VII. Disease of the Right Shoulder and Lumbar Pott's Tumor.—E. B., male, aged twenty-two years. Seen at hospital, July 15, 1893. When eleven years of age had Pott's disease, and at fifteen years, without any known cause, noticed his right shoulder was getting stiff; this continued until he was unable to move it, but does not know the exact time, but it was several years. The pain was slight and always worse at night. The arm has over since been much weaker than the other. Never had any treatment.

May 15, 1894.—General condition fair. Is wearing a Russell's truss. Acts as a messenger boy. The right shoulder is very much atrophied and slightly higher than the left, the lower border of the right scapula about an inch and a half lower than the same border of the left. The right arm from tip of the acromion to tip of the middle finger is twenty inches; the left, twenty-one inches. The right forearm is shorter in length, the left ten inches and a half, the right thirteen inches and a half; the left, nine inches. The girth of the middle arm much enlarged, but he has pain in it at times. The external end of the right clavicle is partially dislocated backward. It can not get the hand to the mouth, but just in front of the mouth. It can separate the elbow from the body easily. The arm is very weak and he uses it but little. Nerves are good and there is no joint tenderness. The ankylosis is nearly complete.

DE WARD, PHYSICIAN IN CHARGE.

EARLY AMERICAN SYMPHYSIOTOMIES.

By CHARLES JEWETT, M. D., Sc. D.

APPROPOS of the communication which recently appeared in the columns of your *Journal* from the pen of Dr. R. P. Harris, it is of interest to note that the revival of symphysiotomy outside of Italy began with Pinard, of Paris. It is remarkable that for a period of twenty-five years after the operation was resuscitated by Morisani, of Naples, the rest of the world took little heed of the excellent work that was being done by the Neapolitan operators. Except in Italy, no symphysiotomy was performed during that time. The operation was generally looked upon as obsolete. In our country, Harris was almost the only authority who steadfastly advocated its adoption. He was nearly alone in recognizing the merit of the procedure and in stoutly defending its cause at a period when it was almost universally ignored by other obstetricians. His name will ever be inseparably connected with the history of symphysiotomy and its introduction into this country. Had Dr. Harris performed the operation when he began to advocate it, America might have been the pioneer in profiting by the example of Morisani. But not until Spinelli, a disciple of Morisani's, had visited Paris, and demonstrated the operation upon the cadaver in the presence of Pinard, did symphysiotomy begin to gain general recognition outside of Italy. In February, 1892, the first Parisian operation was reported by Pinard and in little more than a year he had done twenty public sections. Freund, of Strassburg, and Leopold, of Dresden, soon followed him, and as a result of the combined successes in France and Germany the operation spread over both hemispheres.

Unless Coggin's claim and others antedating Pinard's publication in the early part of 1892 are to be established, symphysiotomy came to this country, as it did to Germany, Austria, and England, by way of Paris.

But better evidence of these operations will be required than the Coggin claim is built upon. It is scarcely to be expected that the pioneer in progress in any special department of knowledge should be looked for on the frontier and not among men of special and extensive experience in the great medical centers. All the operations since that which has been alleged for Coggin have been done by experts. To such men we should naturally look for the first step in any new departure in the medical art.

Dr. Coggin's story bears in its face its own refutation. His report, as it appears in the *London Journal of Obstetrics and Gynaecology*, does not make the weight of the child 11 lbs. 15 ozs., and its length 16 inches. In other words, the child weighed four pounds more and measured 4½ inches less than its average. The historical statement is put at such a distance that by the measure of the hypothesis it is a large one, with very small facts. The historical statement, however, was a fiction, the small facts of the new case. It is to be regretted that some of the doctor's frictions in weight and measure are unfamiliar ones. His application of determining birth records and history must be something different from those in general use.

* Case I. Gibney, *Congenital Disease of the Shoulder*, p. 11, and Vol. 1, 1886. Case IV. in No. 1 of same paper.

Dr. Harris says that he bases his acceptance of these early symphysiotomies on sworn affidavits. Is this the way scientific truths are established? Would a reputable physician in any community resort to such means to secure the recognition by his colleagues of his claims to honor? Would he not rather (if his word were not sufficient) appeal to his professional neighbors and associates? If he could not safely do this, would his allegations be worthy of acceptance under oath?

Finally, in the Coggin matter, it is difficult to explain away the findings of the official investigation published by the Medical Society of Etowah County, Alabama, where Dr. Coggin practiced at the time of the alleged operation. After careful judicial inquiry into all the facts by a committee formally appointed for the purpose, their report was adopted by the society and published in the *Medical and Surgical Age* of June last. Copies of the journal with the full text of the report can no doubt be had on application to the office of publication, Anniston, Ala. It was republished in full in the *New York Journal of Gynecology and Obstetrics* for August, 1894. A few passages are all my present space permits me to mention.

Dr. Coggin first announced that his pubic section had been done in Freedman, Etowah County, Ala. The committee, on diligent search, were unable to find any such town in Alabama. The doctor afterward stated that the place where Mrs. Carey Hughes, the alleged patient, lived was Rocky Ford on Wills Creek. No person of that name had ever been heard of in that vicinity.

The doctor said he had been assisted in the operation by Dr. Slaughter. Dr. C. J. Slaughter, of Aurora, Ala., is the only Dr. Slaughter who has ever been known in that entire region, and he denies that he assisted in an operation of the kind, or ever heard of one in that section.

Among the births reported to the health officer of the county by Dr. Coggin no mention was made of the delivery of Mrs. Hughes.

The president of the society invited Dr. Coggin to be present at the June meeting, to exhibit his patient and to produce such other evidence as he might have to establish his claim. He was assured a fair hearing and the official indorsement of his claims should he furnish proof of them. He failed to appear.

The report concludes with a brief account of Dr. Coggin's career. His reputation in Alabama is shown to be of the most unsavory character. It appears that he practiced medicine for some time before he had a diploma, and when, in 1891, he finally produced one, it was apparent that it had been obtained by corrupt means.

Without proof that he obtained his diploma by such means, it would seem probable that he was a quack, and that his practice was of the most unsavory character.

The Southern Surgical and Gynecological Association

will hold its annual meeting in Charleston, S. C., on the 27th, 28th, and 29th of November, 1895. The program of the Association for the year is as follows:

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By JONATHAN WRIGHT, M.D.,

BROOKLYN.

(Second Paper.)

THERE is theoretically no reason why we should not occasionally meet with cases of chronic fibrinous laryngitis. The wonder is in these days of literary activity among special workers that such cases should not have been more often reported. Fibrinous bronchitis has long been a curiosity to be observed in almost any medical museum of pretension. Croupous rhinitis, chronic in its course, is not at all unknown. But Schech, so far as I know, has reported in the *Deutsch. med. Woch.*, March 1, 1894, the only case that can be rightfully placed under that category. It is probable that, as in the case of fibrinous rhinitis, we will hereafter read of many more cases.

In Schech's case the symptoms of hoarseness had lasted about six weeks before the patient, a woman, came under observation. There had been attacks of dyspnoea, which were entirely relieved by coughing out white masses. After two or three days dyspnoea would again come on, to be again relieved in the same way. The formation of the membrane was principally upon the left false vocal cord and extended into the ventricles as a plug; the other parts of the larynx were normal. It could with difficulty be removed with long forceps, but would form again in a day. After trying many drugs, ten per cent. nitrate-of-silver applications finally brought about a cure. There was nothing especially to be noted in the microscopic examination of the false membrane. It contained streptococci and staphylococci, and Schech, following the fashion of the day, ascribes to these organisms the occurrence of this pathological curiosity. This etiological habit has become absurd, since streptococci and staphylococci have been found in a large number of apparently normal throats. Such a pathological condition might almost as well be ascribed to the presence of teeth in the jaws or saliva in the mouth.

There are several points of interest about the case of Epithelioma of the Larynx in a Man of Twenty-three, reported by Luc in the *Archives internationales de laryngologie*, vol. vii, No. 1, p. 21. The age, so far as known, is the earliest reported. The case was regarded as an ordinary one of laryngeal tuberculosis. This diagnosis was made in spite of the fact that dyspnoea was so urgent that tracheotomy had to be performed; there were no signs of pulmonary involvement.

Certainly it has been my experience, and I believe that the chances are ninety-nine to a hundred in any laryngeal case without much doubt as to require tracheotomy and yet no pulmonary signs, that the case is not tuberculosis, whatever may be the local appearances or the history. I have had two cases of tracheotomy and one of laryngeal disease referred to me with the unquestioned diagnosis of tuberculosis. All had marked pulmonary signs. In two of the cases I did not question the diagnosis, the patients died long

after tracheotomy had been performed, and the autopsy proved the cases to have been syphilis. They died for want of a diagnosis, and were reported in the *New York Medical Journal* for June 13, 1891. In the third case, recently seen on account of the urgent dyspnoea, some slight points in which the local appearance differed from those usually seen in laryngeal tuberculosis, the mortifying experience of the two previous cases led to a tentative diagnosis of syphilis, and the patient promptly recovered under the iodide of potassium. The rule is a very good one that laryngeal tuberculosis rarely produces a dyspnoea which requires tracheotomy. I have never seen or read of a case of laryngeal tuberculosis in which the larynx was so extensively involved as in this case without some pulmonary signs. None of the cases, even the very doubtful ones, of primary laryngeal tuberculosis has reached such a stage as to cause intense dyspnoea. The fact that Luc stands among the foremost laryngologists of the world and has made an especial study of laryngeal tuberculosis shows how easily, in a large routine dispensary service, even the acute observer makes a slip in apparently very suggestive cases. Carcinoma, syphilis, and tuberculosis each have cases on the diagnostic border-line of local appearances in the larynx which require the greatest care and experience in differentiation. The diagnosis in Luc's case was not made until after extirpation of the larynx on account of extensive disease. No bacteriological examination was made. Absence of bacilli in the first stages of laryngeal tuberculosis would be of no value, but absence of tubercle bacilli in the deep ulceration and extensive destruction usual in the advanced stage of Luc's case would, with a trustworthy microscopist, almost exclude tuberculosis.

Gouguenheim, in a paper read before the International Congress at Rome and published in *Annales des maladies de l'oreille*, etc., April 1, 1894, supports assertions previously made by Krause and by Heryng incidentally, that excision of the œdematous swellings of the arytenoids in tubercular laryngitis is not only, with proper instruments, perfectly practicable, but is painless; and, what is still more to the point, in the large majority of the cases relieves the excruciating dysphagia and the dyspnoea when it exists. He asserts that the wounds usually heal in a week or two, and advocates the procedure in proper cases as indicated for the relief of these conditions, without any reference to the natural cure of the case. He is careful not to advance any assertion as to this latter point, the possibility of accomplishing which has been demonstrated satisfactorily by Heryng.

It is certain that the procedure should be more extensively tried, but in this country the chief obstacles to it are: 1. Overcoming the reluctance of the patient to undergo it. 2. Overcoming the very strong and possibly justifiable sentiments of American laryngologists. The great difficulty to obtain help in the work of the laryngologist that these cases may, it is necessary, be treated as "in patients."

In the present state of laryngological opinion in this country one would be taking a heavy responsibility in equating them upon private patients.

Nothing, however, could really be worse than the prac-

tion or futile medical treatment which these sufferers now endure. It is the reproach of American laryngology.

Gouguenheim explains the relief after pain by this operation in the light of the anatomical demonstrations of diseased sensitive nerve filaments recently made by Dansac (*Ann. des mal. de l'oreille*, No. 12, p. 1041, December, 1893).

Dr. Dansac announces somewhat emphatically that in tubercular inflammation of the arytenoid summits there is a "neo-formation of hypertrophied nerves and perineurotic sclerosis governed and directed by hypertrophied cylinders." This he has demonstrated by a new method of staining with chloride of gold. I confess the author's very enthusiastic statements would be a little more satisfactory had he compared sections of normal mucous membrane of the arytenoid region stained in the same manner. The reproduction or rather new formation of nervous tissue in tubercular inflammation is to me a novel statement. Inflammation of the terminal filaments of all the nerves is not a surprising demonstration.

In the *Journal of Laryngology* for April, 1894, Heryng continues his relation of cases of laryngeal tuberculosis cured by surgical interference. His record of twenty cases cured, out of two hundred and fifty-two operated on, makes an imposing array. To judge fairly, however, of the treatment would require a laborious study of the two hundred and thirty-two cases operated on and, inferentially, not cured and not reported. Most of us would desire to see Heryng and Krause at work with their cutting forceps, and observe how they judge what region of the larynx is diseased and what not; how they can even conjecture that they have got it all out.

In spite of Heryng's evident honesty of conviction and the courage with which he works, it is doubtful if he can ever inspire other practical laryngologists with them by reports of cases. Ocular demonstration, extending over a considerable period, is necessary to a conviction which would be firm enough to withstand the discouragement of nine failures out of ten.

Fraenkel, in No. 3 of his *Archiv*, writes a very instructive paper on the So-called Prolapse of the Ventricle of Morgagni, in which he quotes from all the cases recorded, and gives a drawing of the post-mortem appearance of a case of his own, together with the appearance of a magnified section of the ventricle. He sums up the results of his studies of the cases reported and of his own as follows:

"I am therefore convinced that what is commonly understood by the name prolapsus ventriculi is either a choroido-vascular hyperplasia, or a chondritia ventricularis inferior hyperplasia, or a combination of all these conditions. I know thereby that the 'prolapse' always occurs in connection with the presence of the muscular tumor, and that this hyperplasia may have its seat not only in the wall of the cavity of the ventricle."

He thanks for the entire cause of symptoms reported in cases of the tumor which he apparently entirely ignores his theory of a slow inflammatory process was due to the

history was accurate, to the sudden engagement of the swelling in the chin of the glottis.

It would seem that Fraenkel is probably right in his assumption of a hyperplastic process; but it is not unreasonable to suppose that some violent fit of coughing may cause a sudden protrusion of the swelling from the ventricle by the rupture of some of the submucous areolar tissue which binds it to the perichondrium. It is, of course, absurd to suppose that the ventricle is turned inside out as can be done to the finger of a glove.

In Kayser's Report of Cases in Gottstein's Clinic (*Monatssch. f. Ohrenheilkunde*, etc., March, 1894, No. 3, p. 90) there is a short notice of a group of laryngeal cases which should be brought into more prominence in the laryngeal literature of the day. He very properly calls them cases of laryngitis juvenilis nodosa, and says: "By this I understand an affection of the larynx occurring especially frequently in children and young people, in whom, combined with symptoms of a more or less severe catarrh, small yellowish-white nodules, so-called singers' nodules, may be demonstrated in the region of the anterior third of the free edge of the vocal cords. Of the observed nine cases (in two years) five were boys and four girls; the youngest was five years old, and the oldest a fifteen-year-old girl. The course is always chronic; usually the nodules and the hoarseness disappear of themselves in the course of time."

Dr. Rice has recently drawn attention to them as occurring especially in adult sopranos. In the dispensaries we see them in newsboys. They do not have exactly soprano voices in New York, but their "*gesangähnliche Productionen*" might perhaps be put in that category along with that of their more musical brothers in the church choirs. It is probable that puberty, by changing the shape of the larynx and abolishing the soprano quality of their voices, gives rest to the friction spot on the vocal bands, and so cures them.

Kjelman, in the *Berl. klin. Woch.*, No. 13, 1894, p. 316, reports two cases of epilepsy in children—one, twelve years old, cured by cauterizing swollen inferior turbinated bones; another, six years old, cured by preventing compression of the nostrils by the hands during sleep—a habit the child had acquired.

There are curious and interesting cases. It would probably be found that many epilepsies have curable foci of irritation in various accessible situations were all systematically examined by the pharyngologist, rhinologist, otologist, oculist, laryngologist, gynecologist, or other expert expert, referred to, or even examined by, nevertheless, back of them all lies the central vulnerability or sensitiveness to slight abnormal impressions received from the periphery, which evidently constitutes the chief etiological factor. Critical experience teaches and common sense recognizes that cases such as these are and must be exceptional.

Czerny, in the *Archiv. ital. di otologia*, April, 1894, reports a number of nasal neoplasms, as follows: tubercular, and crusted, some as granulomata and some as angiomas. They were made up of small round cells, etc.

In growths of this character within the nose, usually they are advanced the microscope examination is of

small value in differentiating their nature. Whether we have benign granulomata, such as granulation tissue in syphilitic lesions and lymphoid growths—the so-called adenoids of the nasal pharynx—or whether we have a beginning small round-celled sarcoma, is a question frequently only to be solved by the use of iodide of potassium or the subsequent history of the case.

Under the head of bleeding polypi of the nasal septum, Schadowaldt, Alexander, Scheier, and Heyman contribute each a paper to the third number of Fränkel's *Archiv*. Altogether twelve cases are reported, of which ten were in women of different ages, mostly young. Lange is quoted as reporting eight out of ten of his cases as being on the left side. The larger number were situated in the "Kieselsack" position—i. e., just where the epidermis joins with the mucous membrane of the septum; Schadowaldt suggests that they are due to the irritation of the fingernail or other irritating agent from without. He says also they at times grow very rapidly, although they are entirely benign. Scheier and Heyman speak of their occasional prompt recurrence. We may conjecture that this was from incomplete eradication. The most prominent symptom was hæmorrhage—sometimes nasal obstruction. The galvano-cautery, either with the snare or with the platinum point, was used in destroying them and in cauterizing their bases. As for the microscopic examinations, the accounts agree pretty well in essentials, but the nomenclature is varied, one being called by the formidable name of lymphangioma teleangiectatum. The description of their histology compares pretty closely with that of three growths I remember to have examined, one for Dr. George A. Richards and two for Dr. Wendell C. Phillips. They are covered with epithelium, usually of stratified pavement cells, sometimes sending digitations down into the stroma. Sometimes the surface is smooth, sometimes thrown into deep folds or furrows closely resembling, as they do in other ways, the mulberry hypertrophies at the posterior ends of the inferior turbinated bones. The stroma is of fibrous tissue, sometimes separated by spaces described as lymph spaces, and lined with endothelial cells. Probably these are areas of oedematous tissue such as occur in the mucous polypi of the middle turbinated bone. There was a varying amount of round-cell infiltration, probably due to the degree of inflammatory action. The development of the blood-vessels varied in amount, but was always marked and the striking feature of the growths. Heyman says he found no glands in any of them. This certainly is not the rule, although he examined three of his five cases. From this symposium, and from my own observations, I am pretty well convinced that they are inflammatory growths, and if we keep this in mind, and that their marked characteristic is the dilatation of the blood-vessels, it is not of much consequence whether we call them fibrous angiomas, angiomas, teleangiomas, or granulomata, or the other *sesquipedalian* designation mentioned above.

Rossi, in the *Archiv. italiana di otologia* for April, 1894, reports two similar growths from the larynx. I have in my possession sections of such a growth removed by Dr. Richards, also from the larynx.

American rhinologists can not but smile at the article in Fränkel's third volume on the treatment of deviations of the nasal septum by means of the electric trephine and drill. Spiess says that ten years or more ago he heard Goodwillie say that this method was used in America, but he has been unable to find any further account of it, so he worked the problem out for himself. Bronner a year or two ago made the same remark in England. Their instruments resemble marvellously, though they are somewhat crude, those that form part of every American rhinologist's armamentarium—a singular example of how difficult it has always been to make enlightenment travel toward the rising sun. The normal direction seems to be from the Nile to the Golden Gate.

There is a certain freedom from carping criticism enjoyed by our transcontinental *confrères* when they borrow from us which those of us who borrow from them may sorely envy.

Krause (*Berl. klin. Woch.*, No. 16, 1894) makes a very interesting communication of his experiences in the cure of chronic laryngitis by means of deep incisions into the vocal cords parallel with their edges through any thickened, congested, or varicose area that may exist. The cure is supposed to be effected by relief of congestion in the process of cicatrization. Under the lead of Dr. Bosworth we are accustomed in this country to cure chronic laryngitis by correcting deformities, or curing diseases of the nose and pharynx in cases which do not depend upon some specific constitutional dyscrasia or occupation involving the excessive use of the voice. It may be said in further criticism of Krause's remarks that the cases of chronic laryngitis having their sole or chief pathological seat upon the vocal cords are comparatively rare. Much more frequently do we have involvement of the posterior wall or the ventricles or, indeed, of the whole larynx. In these cases surely scarification of the cords can not be expected to accomplish a great deal. Nevertheless, in a few selected cases it may easily be imagined that the procedure would be of advantage.

THE EFFECTS OF ALCOHOL ON MAN:

AN EXPERIMENTAL STUDY.

By W. E. WILKINS, A. M., M. D., M. S.

BOSTON: GINN & CO.

In attempting to discuss this important but much neglected subject, I do not presume to have solved all the complicated problems legitimately belonging to the subject but have merely constructed a report of facts and conclusions reached during an extensive experimental study on the living subject. The men on whom experiments have been made were for the greater part healthy, except for the arrangements the violation of which can be directly traced to the moderate use of alcohol. This has been supplemented by a study of the medical anatomy of the nervous system that I have been able, by the courtesy of the surgeon and undertaker, to make. These bodies were selected with due reference to the subject under consideration. This study of the medical anatomy of those that had

as chronic inebriates has yielded knowledge obtainable nowhere else, but of such a mixed pathological character that it has been extremely difficult to trace out those effects for which alcohol alone is responsible. How well I have succeeded remains for my readers to judge. It will be seen that some new ideas in physiology have been advanced, a few pathological questions heretofore unanswered made plain, while many are left still in the dark, and most likely will so remain till the State, in its superior future wisdom, shall deliver condemned criminals to scientific societies for experimentation. I have deemed it proper, in order to proceed as systematically as may be, to first inquire as to the effect of alcohol on the microscopical elements of the minuter parts of the body; second, on the tissues; third, on the digestive tract and secretions; fourth, on the organs; and, lastly, on the mind and fetal life. Then make a few remarks on the effects as a whole.

On the Neurine.—The most important effect of alcohol on the tubular neurine is a shrinking and hardening of the neuron itself. This shrinking is in direct ratio to the concentration of the liquor, and the length of time it is subjected to its influence. If this is habitual and continuous, it will have two ultimate results—viz., a narrowing of the lumen of the tubules, and impairing the function of the intertubular vesicles, thereby limiting or entirely suspending their capability to transmit impulses from the nerve centers. Now, if we consider that the encephalon, medulla, and spinal cord are all of the same material as the neuron and of course subject to the same deleterious effects as the nerves, we can appreciate the great mischief made possible by this effect of alcohol. The shrinking and consequent hardening above mentioned are the direct results of the well-known law of exosmosis. The water in the nerve substance has a greater affinity for alcohol than alcohol has for water, consequently there is more water expelled than alcohol taken up; hence a shrinking of the parietes of the ganglion and substance of the neuron and a narrowing of the lumen of the tubules. By the inordinate and continuous use of alcohol there is a dissolution of the vesicular neurine by the dissolving out from the intercellular contents of phosphorus, protagon, and lecithin. The extent of this disorganization is in proportion to the amount used and strength of the liquor. Some such effect, however, is always to be expected by the moderate use of alcohol; but the results are not always manifested in the same degree. Nature, with her vast capacity for recuperation, speedily restores the vesicular neurine to its normal proportions. But, as we shall see farther on, the prolonged excessive use of liquor causes permanent injury to the great nerve centers that is never repaired. The free phosphorus can be detected by its luminous appearance, while the urine from an old inebriate is often tinged on the second by a dark glass. Some observers assert that they have seen this tinged appearance in the urine from the first hour in the disease process. I have no doubt of the truth of the assertion, although I have never had the privilege of continuing to test have frequently noted the fact that in the free phosphorus in the urine—a sign of alcoholism. And, however, even the slightest sign of

figure, a ghost, luminous and hell-born, rising up to warn the enfeebled intellect of its final imbecility. This indirect consequence of the disintegration of the cell neurine will be to greatly embarrass or entirely suspend life in the whole vegetative system supplied by the nerves affected. This is accomplished by the disorganization of the neurodynamia in the ganglionic centers.

On the Textometer.—I am going to use the word textometer instead of the word protoplasm of Remak, sarcode of Dujardin, cytoblastema, blastema, liquor sanguinis, or any of the many words of modern times, because it expresses the idea I wish to convey—i. e., textometer literally means the mother of tissues, while the other words include only one or more of the characteristics of that fluid, the combining of chyle with which is capable of replenishing the tissues of any part of the body with proper pabulum from the non-nucleated contents of the vesicular neurine to the osteoblasts of the femur. The word textometer, then, will represent a combination of chyle with the blood after the combined fluid has passed through the lungs. With this explanation, by the way, I will now consider the important changes which take place when alcohol is absorbed into the circulation. The parietes of the cells inclosing the germinal matter are dissolved, the albumin not in combination is coagulated, the red blood globules are deprived of a part of their contents, which mingles with the liquor sanguinis, leaving them shrunken and wrinkled; the organizability of the textometer is impaired. The immediate result of all this is to fill up the connective tissue with foreign compounds and favoring the growth of the various tumors and neoplasms. The chemical selective power is either impaired or entirely destroyed, rendering wounds difficult to heal. This is caused by one of two conditions. In one instance there is an abundant proliferation of pure germinal matter, which can not be organized owing to the effect mentioned above, and degenerates into pus cells. This is the direct result of overstimulation. In the other instance the *vis metabolica* is suspended, because, as seen before, the ganglions are deprived of phosphorus and protagon by the direct solvent action of alcohol. This deficiency prevents the proper organization of the neurodynamia in the gray matter. Hence the injured soft parts disintegrate, neoplasm forms in the wounds, while the broken bone receives no osteoblasts with which to repair the damage.

On the Capillaries.—Alcohol paralyzes the vaso-constrictors and at times stimulates the vaso-dilators of the capillaries and arterioles in the immediate vicinity of the affected parts, causing a hyperemia, afterward producing a stasis of the circulating fluid. If this condition continues a certain length of time, varying somewhat according to the nature of the affected tissue, inflammatory processes are set up, with consequent disintegration of the substance of the part, tumor, and abscess. A second and effect in the case of stasis in the capillaries of an organ is the disturbance of proper pabulum by the inactivity of the communicating plexuses. This remotely results in either a permanent hypertrophy, as in a case where collateral circulation has been established, or in atrophy, as in a case of ulceration and final destruction of a part of the vas-

cular system in the organ. In the cases of hypertrophy the alcohol has a selective preference for the vaso-constrictors, paralyzing them, while it stimulates the vaso-dilators. Thus we have the lumens of the blood-vessels and capillaries fixedly enlarged to their greatest extent; the organs enlarge to an enormous proportion; Nature struggles to rid itself of the foreign matter, which rushes in from all parts of the system; the cell walls collapse and coalesce, forming the so-called giant cells, which accumulate into neoplasms; destructive metamorphosis takes place; so we have here and there abscesses, with an extensive proliferation of pus corpuscles, with all the train of evils consequent upon such a condition, but too numerous to mention. If, on the other hand, the selection is made to paralyze the vaso-dilators and stimulate the vaso-constrictors, then we have atrophy of the organ, entailing on the animal economy the evils the kind and extent of which is indicated by the function of the organ itself. Just why the alcohol should select a set of nerves on which to act at one time and a different set at another does not at once appear, but it is a well-authenticated fact that it has a selective power. Most likely the explanation lies in the chemical or electrical condition of the white substance at the time of action, or it may be attributable to the different chemical constituents of the liquor used. The power resides in the textometer in connection with the *vis metabolica* of the cells. This power enables the osteoblasts to make their way from the receptaculum chyli to the distant broken bone, there to repair the damage. The substance of which nails are formed does not go to build up muscular tissue; neither is the enamel of the teeth found in the vesicular neurine. As to the nature of this force all we can say is,

"The hand of God
Has written legibly that man may know
The glory of his Maker."

On the Intestinal and Digestive Tracts.—The effects of alcohol on the digestive tract and intestines are various, according to the nature of the secretions and parts with which it comes in contact. In the mouth the ptyalin in the saliva is precipitated, forming an insoluble compound that has no proper place in the animal economy. The small amount of albuminous matter is coagulated, rendering the saliva less potent in its action on starchy foods, and, although most physiologists attach but little importance to this secretion except as a sort of moistener and mixer in the preparation of food for deglutition, yet it has an important function to perform in the fitting of certain foods for digestion that are afterward transformed into glycogen by the liver, and I am not sure but that starch is to some extent at least turned to sugar in the mouth by the saliva. Certain it is that the fermentative power of ptyalin is neutralized by alcohol whenever they come in contact. Now, as starch can not take the place of sugar in the system, and as a mixture of ptyalin and alcohol can not be used in any of the tissues, in so far an injury is done by the destruction of ptyalin as a ferment. In the stomach the pepsin is thrown down and the water, which is nine hundred parts in a thousand, forms its usual mixture with alcohol, which is

a detriment rather than of any use to digestion of any of the foods. The peripheral nerves in the gastric follicles are paralyzed, and the flow of the stomach secretions are nearly if not quite suspended. The sympathetic filaments in the stomach are stimulated and a retrograde peristaltic movement is excited and the contents are ejected. In old inebriates the liquor is thus rejected time and again when they attempt to take their morning potations, and only after repeated efforts are they able to retain any food or liquor. After they have thus forced down a few doses they can take nourishment and go about their business. This condition is due to the paralysis of the vaso-dilators, while the constrictors are stimulated, shutting out the gastric juice. The tongue, mouth, and esophagus are dry and hot; the stomach is inflamed and covered with a tough mucus, streaked here and there with a bloody slime, the remains of ruptured arterioles in the mucous follicles. So soon as the liquor renders the motor filaments less sensitive, and after the morbid secretions have been thrown out of the stomach and the vaso-dilators rendered active by the repeated attempts to retain the liquor, it finally "stays down" and the man feels more comfortable. At times a dozen potations are necessary to "tone up" the stomach that it may receive and digest food. I leave my readers to imagine the picture of the total wreck of the man or woman who persists in the course indicated above three hundred and sixty-five days in the twelve months, year after year. I will now consider the effect of alcohol

On the Small Intestine and its Secretions.—The duodenum will receive the larger part of the consideration under this head, as the pancreatic secretion is discharged into the intestines at this point of the *primæ viæ*; the bile also is poured into the duodenum, thus making the "second stomach" a very important part of the digestive apparatus. The effect of alcohol on the secretions that find their way into the duodenum is disastrous to the proper digestion of the oleaginous foods, and is responsible for the fatty degeneration of the heart and other organs of the body, as we hope to make manifest below. The pancreatic secretion is nearly entirely conglutated by alcohol, rendering the pancreatin, its active proximate principle, inert, so far as emulsifying fat is concerned. It is true the conglutated secretion is re-dissolved into its former elements by pure water; yet it is impossible to restore it in the presence of alcohol, as there is a mixture of water and alcohol in which the secretion will not dissolve. As noted above, the gastric ferment is rendered ineffective by the precipitation of its pepsin, and now, coming in contact with the bile, defective as it is, another important change takes place—viz., the bilirubin and biliverdin are both precipitated and form an insoluble compound with alcohol, and whatever pancreatic pepsin is lost to the proximate principles is lost to digestion. I wish to add, however, that this precipitation does not take place if the portions of the gastric secretions are actively present. Although the exact changes wrought by the different constituents of bile have not been made out by physiologists, still there is enough definitely known to render bile as essential to complete digestion. The fact is, if man were deprived of that secretion, he would immediately degenerate and

finally die of inanition. There is an effect of alcohol on all oleaginous substances in the duodenum of which I wish to speak in special terms, and this seems to be the proper place in which to make the statements. The stearin of the fat—that proximate principle which gives to ordinary adipose tissue its firmness—is dissolved by alcohol out of the fat globules. This dissolution is probably aided by the duodenal secretions. The remainder of the fat becomes a foreign body in the circulation, and, being a compound of palmitin and olein only, does not possess that property by virtue of which it is attracted to the adipose vesicle, but is deposited in the different tissues, in the various cavities, in the different organs, and even in the ventricles of the heart and in the great blood-vessels—thus constituting that dreaded pathological condition known as fatty degeneration. Now, the opinion of the author in regard to the function of bile briefly is this: It gives to properly emulsified oleaginous substances that property by the aid of which it is enabled to take its place in the vesicles of the adipose tissue, there to perform its physiological and mechanical functions. That the bile has other duties to perform is well known, but I will not discuss them here. In precipitating the coloring matter of the bile, as above described, by alcohol, it loses its property to impart to fat the *vis metabolica* so necessary to its proper function. This degenerated fat condition is especially true of consumers of inordinate quantities of beer or wine; more so after middle age than before. It is also noticeable that those people whose fat hangs in flabby looseness on their bodies succumb very promptly under the surgeon's knife, either in minor or major operations. A recovery in any severe illness or in epidemic diseases is the exception rather than the rule. Yet we are met with the assertion, true no doubt, that many inebriates live to a ripe old age. The fact, however, is this: Those who reach a great age and die inebriates are promptly reported to the Associated Press, and we all hear of the remarkable fact, while the nine hundred and ninety-nine who go down to the grave in a mass of highly nitrogenized filth, from the direct or indirect effects of alcohol, receive little or no attention from the public as to the cause of their death.

For want of a more suitable place, I append the notes of two out of the fifty-one post mortems as types of spirit and beer drinkers, respectively. At the examination were present Dr. A. L. Hunt, Dr. Sawyer, Dr. Howard, and others as students.

Mr. W. W., a drinker of spirits for twelve years. His former physicians had noted a quantity of pathological records. The body was extremely emaciated, with the white fatty tissue over the bones. In making the dissection a cutting of fat was to be made, and a suggestive yellow hue under the skin. On opening the abdominal and thoracic cavities, the absence of any food was remarkable. The lungs seemed to have died of inanition. The "conglutinated bile" was undoubtedly the cause of the death. The lungs were completely atrophied. The liver was found in the condition of a nut. The stomach was found to be in the condition of a nut. The heart was found to be in the condition of a nut. The kidneys were found to be in the condition of a nut. The bladder was found to be in the condition of a nut. The rectum was found to be in the condition of a nut. The sigmoid was found to be in the condition of a nut. The colon was found to be in the condition of a nut. The small intestine was found to be in the condition of a nut. The large intestine was found to be in the condition of a nut. The appendix was found to be in the condition of a nut. The gall bladder was found to be in the condition of a nut. The pancreas was found to be in the condition of a nut. The spleen was found to be in the condition of a nut. The testis was found to be in the condition of a nut. The ovary was found to be in the condition of a nut. The uterus was found to be in the condition of a nut. The vagina was found to be in the condition of a nut. The cervix was found to be in the condition of a nut. The os was found to be in the condition of a nut. The perineum was found to be in the condition of a nut. The anus was found to be in the condition of a nut. The rectum was found to be in the condition of a nut. The sigmoid was found to be in the condition of a nut. The colon was found to be in the condition of a nut. The small intestine was found to be in the condition of a nut. The large intestine was found to be in the condition of a nut. The appendix was found to be in the condition of a nut. The gall bladder was found to be in the condition of a nut. The pancreas was found to be in the condition of a nut. The spleen was found to be in the condition of a nut. The testis was found to be in the condition of a nut. The ovary was found to be in the condition of a nut. The uterus was found to be in the condition of a nut. The vagina was found to be in the condition of a nut. The cervix was found to be in the condition of a nut. The os was found to be in the condition of a nut. The perineum was found to be in the condition of a nut. The anus was found to be in the condition of a nut.

embolus, no doubt causing instant death. This fat was soft, and under the microscope showed no stearin. The plug in the aorta was pulled out, and was about two inches long. The body of the beer drinker weighed in life two hundred and twenty-five pounds. While making the long incision through the five inches and a half of fat the oil followed the knife, although the weather was cold. All of the muscular tissue and the different organs were infiltrated with this degenerated fat. Soft, fatty tumors were found in the liver, spleen, intestines, and mesentery. The heart contained eight ounces of degenerated fat. The lungs were normal. No adhesions of the pleura. Both of these men dropped dead from aortic embolism.

It is not thought necessary to accumulate evidence in support of the statement that the excessive use of alcohol in the form of malt or spirituous liquors produces that pathological condition known as fatty degeneration, and that, on account of the degeneration of the fat, it is deposited in abnormal places, not answering the uses of mechanics or physiology in the animal economy, as does the true adipose tissue. I will only add this in dismissing this part of the inquiry: In the above-described condition, the etiology of which can be referred directly to the excessive use of alcohol, will be found the explanation of those conditions known as embolism, thrombosis, and apoplexy.

On the Liver.—In addition to what has been above written of the effect of alcohol on the liver I wish to record only a few facts. The glycogenic function of the liver is modified and restricted by the excessive use, continued any length of time, by preventing the rehydration of glycogen, without which it can not be taken up by the capillaries and put into the circulation. This result is caused by a union of the alcohol with the water, which, as we have seen, can not be used in any physiological process. Not that this mixture is not absorbed and put to some use, but I wish to be understood as saying that when a mixture of alcohol and water is used it produces a pathological result instead of a physiological one. There is a chemical or vital action affecting the production of biliverdin that takes place when alcohol finds its way into the liver—viz., it prevents the oxygen of the blood and water (i.e., pure water)—from uniting with the bilirubin to form the green coloring matter of the bile. We know that the proximate principles of the bile are essential to life. Hence we must conclude that even the small quantity of alcohol that finds its way into the liver is inimical to life. Now, as to the well known effects of alcohol represented by the words "gin liver, hobnail liver, whisky liver, etc.," we deem it unnecessary to speak, merely adding that the neoplastic deposits indicated by the above names are a result of the paralysis of the vaso-dilatation of the abdominal vessels consequent on the permanent paralysis of the panto-

On the Kidneys.—The first and most frequent effect of alcohol on the kidneys is polyuria, that is, a great deal of little urines, which is sometimes chronic, and is, unfortunately, inappreciable to the eye. That there is a pathological condition of these organs is easily established. The amount of the excretion of the kidneys is diminished as represented by the mixture of alcohol and water in the blood, and a general anuria about ten per cent. according to the amount of distilling the urine. The urine discharged, however, as we have seen, it

can not be used in the animal economy. When this polyuria becomes chronic and other changes favorable take place, we have a glycosuria or diabetes insipidus, and later on diabetes mellitus. Not that all inebriates have diabetes mellitus, but, when the conditions are as named—i.e., inordinate use of alcohol in a proper subject—the result is inevitable, and we have the conditions on which diabetes mellitus depends.

To these conditions I now invite your attention. I have shown above that lecithin is separated by alcohol from the vesicular neurine. This proximate principle readily unites with the oxygen of the blood, forming with water nitrous oxide. I have also shown that phosphorus is set free by alcohol, which forms a combination with the nitrous oxide, producing free phosphoric acid, which, according to the latest and best authority, is a potent factor in the production of diabetes. This diabetic effect will be augmented by the action of alcohol on the medulla. Liquor has a selective action on this organ, and, through direct and reflex action, maintains a profuse diabetes. There is one other prominent factor in the production of diabetes, and that is the accelerated movement of the circulation through the liver. The glycogenic function of that organ is performed deliberately and accurately when done physiologically, converting all the glucose into glycogen, and storing it away for future economic uses. When alcohol is used to excess the hepatic circulation is greatly excited, in common with the whole circulation, however, hurrying the blood forward, carrying large quantities of unchanged glucose with it to be discharged by the kidneys, and many times is of itself the cause of diabetes mellitus, or possibly more frequently exciting an acute nephritis. The above are the three conditions on which diabetes mellitus depends, so far as those causes are due to the use of alcohol. This disease has heretofore been considered incurable. The last purely physical effect to which I wish to invite your attention is

Muscular Degeneration.—Excessive drinkers in the stage of their decline—when they become bent and aged before their time and are rarely able to perform manual labor on account of the atrophic condition of the muscles—are in a state of muscular degeneration which results from three causes: The arterioles and capillaries which carry in pabulum with which to repair the muscular waste are in an atheromatous condition, while some of the plexuses are entirely destroyed by the results of adhesive inflammation. Hence there is no adequate supply of material with which to build up the wasted muscular fibers. Then the vaso-dilators and constrictors, by the action of which muscles are stimulated to action, are generally in a chronic state of paralysis. If the above conditions were not present, the deposition of the degenerated fat in the muscular cells would preclude the possibility of performing any labor. This is particularly true of beer and wine drinkers.

On the Encephalon.—After the period of excitement and stimulation, when a shared alkali by all the organs of the body and the mind, come what I shall call the paralytic condition. Alcohol has a selective affinity for the vesicular neurine of the cerebellum, and affects it much more

he would be able to retain the meal on his stomach until he could get to the spittoon in the next room; sometimes until he could get to the sidewalk in front of his house—when he would be compelled to “throw it every bit up.” This was not the case at every meal, but occurred with increasing frequency, and especially at breakfast.

The second case, Mr. T., aged forty-four years, had suffered from the same trouble for a number of years. With him, however, vomiting immediately after eating occurred less frequently than in the case of Mr. S.

The third case was that of Miss W., aged thirty-three years. Trouble the same. Remedies for dyspepsia had proved useless in all three cases.

The three patients consulted me in regard to spasmodic coughing spells, mentioning only incidentally the facts in regard to the vomiting. In the first case, the spasmodic coughing spells were of great severity and frequency, occurring at all times, chiefly, however, in the mornings. In the second case, the coughing spells occurred almost exclusively in the hour or two after rising. In the case of Miss W., as in the first case, the coughing spells were numerous and so severe as to be exhausting. They occurred at any and all hours—the slightest exertion might bring them on.

In all three cases the patients were total abstainers from alcoholic liquors. In the second and third cases the patients, at all appearances, enjoyed the best of health; in the first case the continuous coughing spells and the repeated ejection of food from the stomach had begun to tell on the patient's strength. In all three cases the patients were engaged in business requiring much active bodily exercise. In the case of Mr. S., examination of the nose and pharynx revealed the following condition of affairs: Nose, deviated septum, touching inferior turbinate left side; turbinate hypertrophy. Pharynx, chronic congestion with varicose condition of superficial veins in mucous membrane. *Relaxed uvula.* In the case of Mr. T.: Deviation of septum; hypertrophied turbinates. Pharynx congested, chronic; *relaxed uvula.* In the case of Miss W.: Nose, normal; pharyngeal mucous membrane slightly congested; *uvula normal.* And in this case it was not until after some trouble that I discovered the cause of the coughing spells. On either side of the median line of the tongue at the base was a swollen, inflamed papilla, against which the uvula, though normal in size, would rub each time the base of the tongue was raised, whether in talking or otherwise. In the first case, removal of the hypertrophied portion of the uvula and treatment of the nose caused a cessation of the desire to vomit after meals, and also of the severe spasmodic coughing spells. The same result followed from the removal of the elongated uvula in Case II. In Case III the papillae were removed and the symptoms disappeared. It may be further said that in all three of these cases the pharynx was so irritable that attempts at post-rhinoscopic examinations were followed by vomiting; while in one of them, namely, Case II, when the tongue being held down with the depressor—with a cocaine solution was followed immediately by a condition of more or less of the contacts of the uvula. In Case III there was a prominent symptom which is constant closure of the throat, with the result that food always returns to the sensation of “something in the throat.”

I do not wish to go into all the symptoms and appearances of elongated uvula, among which I might mention double retinal hemorrhage as the result of a coughing spell brought on by its presence. I wish to call attention to the fact that where we have apparently healthy persons who are unable to retain food in the stomach, and who suffer from

paroxysmal coughing spells, preceded by a desire to clear the throat, the cause of the trouble may lie in an elongated uvula or an irritated papilla on the base of the tongue, so situated that the uvula, whether normal or elongated, can rub against it. Why an elongated uvula should at times cause, immediately after eating, the rejection of food by the stomach requires, I think, the consideration of several points. The elongated uvula acts in a measure as any foreign body placed on the base of the tongue, and its presence results in the production of either the act of swallowing or the act of gagging, or the chest is called into play, and there results an effort at expulsion by clearing the throat.

In some people constant “clearing the throat” seems to be the only unpleasant symptom caused by elongation of the uvula. In other people cough results. In a third class—not to mention others—the presence of the elongated uvula produces from time to time a train of symptoms, in which spasmodic coughing and choking play an important part, severe enough to result in unconsciousness on the part of the sufferer. The presence of an elongated uvula in the proper subject causes, through the repeated efforts by coughing, etc., to get rid of “the something in the throat,” additional congestion in an already more or less congested mucous membrane, and with this additional congestion comes additional sensitiveness of the pharyngeal mucous membrane. And I am inclined to think that in those cases where rejection, immediately after eating, of food by the stomach takes place, its immediate cause is to be sought in a temporary further relaxation of the uvula induced by the further congestion of the pharyngeal mucous membrane accompanying the increased activity in the salivary and mucous glands caused in turn by the act of taking food. The temporary increase in size of the uvula, however small the increase may be, gives the sensation of a foreign body on the base of the tongue, causing gagging and then vomiting.

ELECTRICAL (SO-CALLED) BODY APPLIANCES.

By H. C. NEWMAN, LAWRENCE, M. I. E. E.

Body appliances bearing such names as electric, magnetic, electro-this and magneto-that, and so on through all possible word combinations in which the word “electric” may be included or implied, are plentiful. The word can only be put so prominently forward because it is supposed to carry a definite meaning, and has been found to possess great attraction for the general public. This is an electric age, we are told, and it naturally follows that a large number of persons exist who blindly accept anything that is told them under the word “electric,” and often thoughtlessly, but enthusiastically, adopt and promulgate views, statements, and appliances which outrage every known scientific law bearing upon the subject.

Physicians are for the most part well aware of this; are quite prepared to condemn these appliances on general grounds and to warn their patients against the persons who sell them; but hardly so ready or able to give reasons for their condemnation, and to show *why* these things are of no use. Unless a physician can give good reason for his

condemnation of electric body appliances the fact that he does so condemn them is very apt to be taken as evidence of professional jealousy and narrow-mindedness; and his reputation and connection suffer in consequence.

It may therefore be well to here consider briefly the conditions under which these appliances are supposed to work, and to see how some recent scientific investigations assist us to form definite opinions thereon.

First, it may be said that a very large proportion of these so-called electric appliances are so badly constructed or so marvelously connected that they can not by any possible chance or mischance produce electric currents. Some bear their own condemnation upon their faces, for they are announced as *never wearing out and never requiring renewal*.

The only way in which an electric appliance can benefit the body electrically is by *producing electrical energy capable of doing work upon the body*, in the same way that an electric-bell outfit must produce electrical energy capable of doing work upon the bell—i. e., make it ring. There must be a source of energy in the apparatus, and that source requires to be renewed from time to time as the energy produced by it becomes exhausted. In other words, we must have an electric battery, and the electric battery which will never wear out nor run down, as it is called, has yet to be discovered. Science says clearly and definitely that energy can not be created; it may be transformed, changed in character—as from chemical to electrical in the galvanic battery—but it can not be obtained or created from nothing. Any electric appliance, therefore, which professes to *never need electrical renewal is a fraud*.

Let us take an illustration from the typical electro-magnetic appliance. We have one or two or more strips of magnetized steel sewn into garments or bands, and we are told that the presence of these magnets causes electrical currents to be set up in the body. Now, while it is quite true that electric currents may be produced in a conductor which is in proximity to a magnet, it is also true that in order to do this one of the two must be moved relatively to the other. Either the magnet must be moved relatively to the conductor or the conductor be moved relatively to the magnet. Without such motion no current can be set up in the conductor. Were it otherwise there would be no need to employ large steam engines, or water motors, or to seek the power of Niagara Falls to drive dynamos for the production of large currents for electric light and power purposes. All that would be necessary would be to place magnets near the conducting wires and then to have off all the electric energy required. The absurdity of such a theory is apparent to every one, and yet when it is put forward in connection with body appliances many are willing to accept it without question or thought. The body, which is often supposed to be the conductor, then it must contain the source of magnetic force, and there is no conceivable way of obtaining it in this manner. There is no energy or power in the appliances, and consequently no possibility of any electric influence upon the body. It would be just as reasonable to place a furnace and a coal fire under and expect the heat to be derived from without any movement of the furnace—i. e., without any expenditure of energy.

While on the subject of electro-magnetism it may be well to refer to the fact that magnetism alone has been said to influence the body. Against this assumption (in favor of which not one iota of physiological proof has ever been offered) we have the carefully carried out experiments of Kennelly and Peterson,* who, throughout a long series of tests, found not the slightest evidence of physiological action, even when their subjects were placed in very strong magnetic fields. Further, the startling claims of Dr. Luys, in Paris, as to the curative influence of magnets, were shown by Dr. Hart † to be based upon psychological effects alone, equally good results being obtained from dummy magnets of wood, etc. In fact, the suggestion was everything and the fact nothing.

Other appliances and devices are to be found which differ from the above only in the point that they do not claim magnetic action. They profess in some other way to do electrical work without any provision for the production of electrical energy, or they are said to act in some hitherto unknown manner, which even their vendors do not attempt to explain, but lead the public to suppose the action (*sic*) to be electric because they use the word electric or electro as a title. An apparatus of this latter type has recently had a large sale both in America and in England. Its vendors have never (so far as I know, and I have questioned them myself) attempted to explain the action claimed for it. Nor can they, for the whole idea is an outrage upon the well-known and oft-proved laws of physics and physiology. Yet this thing is sold freely at more than a hundred times the cost of its materials, and some people who claim to be apostles of light and leading do not hesitate to openly praise and recommend it.

I will pass on to those devices which are, perhaps, even more difficult to deal with because there is a germ of truth in them. I mean those appliances which are capable of producing electrical manifestations under certain conditions. Now, what are the conditions under which electricity may influence the body—i. e., do work upon it? Physiologists tell us that the properties of galvanic or continuous electric currents which can influence the body structures are the electrolytic, the thermal, and the cataphoric—electrolytic, by means of which the fluids of the body are decomposed or broken up into their constituent parts; thermal, by means of which the temperature is raised either locally or generally; and cataphoric, by means of which substances in solution are forced within almost any transverse part of the circuit to another. To produce these effects requires a power which can pass through the body or that portion of it which it is intended to influence. The body offers considerable resistance to the flow of an electric current, and consequently any current passing through a proportionate amount of electric pressure, or electro-motive force, as it is much called, can overcome this resistance, pass thru and do work upon the body. The case of water is somewhat similar in this respect, which is shown, if one stuff is poured or thrown against a dam falls to pass

* *Philosophical Magazine*, Dec. 1892.

† *Medical News*, March.

through it, but when fired from a pistol, by reason of its velocity or pressure, not only passes through but is capable of doing work on the other side. Going a step further, we may point out that supposing the door to be very thick or have iron sheeting over it, an ordinary pistol would fail to pierce it, but that a bullet from a more powerful gun would easily succeed. For electrical purposes the body may be said to be protected by a semiproof sheeting (the skin), which can only be penetrated by currents possessing considerable pressure on account of the resistance it offers. It would occupy too much time and space to go fully into the consideration of the resistance of the human body. Many authorities have found the value of this resistance under various conditions, but until quite recently no measurements taken *under belt conditions* had been recorded. Those who have never tried such measurements can not fail to be astonished at the high resistance of the body under these circumstances. "A short time ago I measured it on several people, using for the purpose a belt which had just been purchased at one of the large London establishments for the sale of such commodities. The average resistance was 800,000 ohms. As this particular belt had rather small discs, I will assume that the figure may be less with others whose contact discs are larger or differently arranged. Let us be charitable and call it a half—i. e., 400,000 ohms. . . . To pass even the tenth part of one milliamperè through such resistance requires (by Ohm's law) forty volts, and this is at least forty times more than the best of such belts is capable of."* This view of the resistance of the body under belt conditions has been also proved by Dr. W. S. Hedley,† and by expert evidence given at the famous Harness belt trials which occupied the English law courts at intervals during the autumn of 1892 and spring of 1893.‡

Such being the resistance, let us see how we arrive at the conclusion that forty volts is forty times more than such belts are capable of producing. Every belt which depends upon the moisture of the body for its action can not produce a higher electro-motive force—electric pressure—than that of one couple of the elements of which it is composed, because all the elements dip into the same electrolyte (the body moisture), and can not therefore be connected in series. There may be many elements, but the fluid of the body can not be separated off into cells. It is all in one containing vessel, so to speak, and the only effect of increasing the number of the couples is to practically increase the size of the plates of *similar* metal. As electro-motive force depends only upon the electrical *difference* between the metals used in the same exciting fluid or electrolyte, it follows that the total electro-motive force of these couples is the same, no matter how many of them are used. The couples used in these belts are nearly always copper and zinc, and their maximum electro-motive force in the presence of such fluids as body moisture is less than one volt. Other couples may give a slightly

different result, but no combination has yet been found which, with such an excitant, will give over one volt.

So far, then, we have an arrangement which may give one volt and which has to act upon a resistance of four hundred thousand ohms. This, by Ohm's law, will give a possible current through the body of *one fourth of a thousandth part* of one milliamperè—an infinitesimal fraction of the smallest current (one milliamperè) recognized by electro-therapists; too small for the conception of any but the theoretical mathematician, and less than may be obtained by dipping a needle and a pin into a spot of ink.*

The belt venders are now trying somewhat to trim their sails to the wind and declare that their devices are only intended to generate small currents, and that their infinitesimal possibilities may prove useful to the body if the *time* factor is taken into account; that a small electrical influence applied for a long time is equivalent to a greater influence applied for a proportionately shorter time. Imagine having to wear a belt four thousand hours (nearly six months) before the effect of even one milliamperè-hour could be obtained!

Recent discoveries have, however, given us (if possible) a stronger and simpler answer to these absurd claims. We have seen that one of the most important properties of the electric current which influences the body is the electrolytic. To produce electrolysis in any fluid requires at least a minimum electro-motive force. This minimum varies in different fluids and semifluids, and has recently been determined both by calculation and experiment to be for chloride of sodium—calculated, 2.02 volts; determined by experiment, 2.10 volts;† let us say in round figures two volts.

We have proved that belts which depend upon the moisture of the body can not generate more than one volt. For electrolytic purposes various authorities agree that the fluids of the body are equivalent to a two-per-cent. solution of sodium chloride.‡ Sodium chloride, as we have just seen, requires at least two volts to electrolyze it. Therefore it is impossible for these belts to produce electrolysis in the human body.

Thus, both as regards electro-motive force and quantity of current, these belts stand condemned as useless. Of course, many testimonials vouching for the curative value of these and other body appliances equally impossible are to be met with, and some at least of them are genuine expressions of the belief of those who wrote them. Any one who observes human nature knows something of the enormous influence of mind over body; it is almost impossible to set a limit to it; but because mind influence occasionally brings about some startling cure, under cover of the use of some appliance which is absolutely incapable of producing any physical or physiological effect upon the body, it by no means follows that the appliance ought, therefore, to be called curative. It is simply an evidence of the psychological influence and of the same nature of things as the

* *Electrical Review*.

† *Comptes rendus Acad. Sci. Paris*, 1892. Article by C. Nourisson.

‡ Brand and Rockwell, W. J. Morton.

* *Electrical Review*, 1892, p. 100. Article by C. Nourisson.

† *Electrical Review*, 1892, p. 100.

‡ *Electrical Review*, 1892, p. 100.

ratory of the Johns Hopkins University, was that its abdomen had begun to enlarge six years before, and the swelling had gradually increased. During the six years the cat had had no kittens, but its general health had seemed to remain good until within a few days of its death, when it had declined food and slowly died. Locomotion, however, had been difficult. A week before its death the girth at the umbilicus was seventy centimetres, and distinct fluctuation could be elicited.

The necropsy was conducted by Professor Welch. Although the photograph shows only one uterine cornu, both the cornua were found enormously dilated throughout their entire length, "resembling sausages in their contour." Each cornu presented three constrictions and was forty-five centimetres in length, with a maximum diameter of twenty-five centimetres. They contained thin, dirty, grayish-white pus, free from odor, in which there were many large cells filled with fat-droplets, multinuclear leucocytes, detritus, and myriads of short bacilli resembling in form the colon bacillus. Both oviducts and ovaries appeared normal. The vagina was greatly constricted just within its orifice, so as not to admit the finest probe, and it is suggested that this stricture may have been the cause of the uterine disease. It is not stated whether or not the cat had ever had kittens.

MINOR PARAGRAPHS.

MEDICAL PUBLISHERS AND MEDICAL JOURNALS.

A FIRM of medical book publishers having establishments in two German cities has lately sent us one of its publications by express—at least, the express company has notified us to that effect, and informed us in addition that certain charges were due on the book. Of course, we shall pay no attention to the notification; our only object in mentioning the matter is to deter our American contemporaries, so far as in us lies, from allowing themselves to be made the victims of such assurance, for we do not imagine that this journal alone has been singled out for its display. Nothing can be more self-evident than that publishers send copies of their books to the journals for their own purposes, and in no wise as an act of generosity; let them, therefore, pay the charges for transportation themselves.

AN INCIDENT THAT MAY HAPPEN FROM THE SUPERSTANDEOUS INJECTION OF ETHER.

The Lancet, *Medical and Surgical Journal*, for September 25th, summarizes a case of fatal poisoning by ether, in which Dr. M. P. Micheli, late of the University of Berlin, describes a case in which a poisonous injection of ether, administered to a patient with typhus, gave rise to the formation of a large abscess filled with pus in the left iliac fossa. This is attributed to the absorption of the ether into the circulation, and it is said that if it had been given in a larger quantity, the patient would have died. The case is reported in the *Lancet*, and is also mentioned in the *Medical and Surgical Journal*, and is also mentioned in the *Medical and Surgical Journal*.

MEM. I.D.

The Late Professor Michel Peter.—It is not often now-a-days that the Faculty of Medicine actually comes just in this manner. It is therefore interesting to note that

when a week or two ago a mass for the repose of the soul of the late Professor Peter was celebrated on the anniversary of his death, the Faculty of Medicine was present in great force. Conspicuous in the devout assemblage were Professor Bourardel, Dean of the Faculty, Professors Jaccoud, Dieulafoy, Guyon, and Cornil, and many other medical stars of the first magnitude.—*British Medical Journal*.

Society Meetings for the Coming Week:

MONDAY, September 24th: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, September 25th: American Public Health Association (first day—Montreal); New York Dermatological Society (private); New York Academy of Medicine (Section in Laryngology and Rhinology); Buffalo Obstetrical Society; Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences.

WEDNESDAY, September 26th: American Public Health Association (second day); New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society (private), New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, September 27th: American Public Health Association (third day); New York Academy of Medicine (Section in Obstetrics and Gynaecology); New York Orthopaedic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia (conversational); New London, Conn., County Medical Society (extra—New London).

FRIDAY, September 28th: American Public Health Association (fourth day); Yorkville Medical Association (private), New York; New York Society of German Physicians (private); New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 29, 30, and 31, 1894.

The President, Dr. WILLIAM T. Lusk, of New York, in the Chair.

(Continued from page 382.)

The Influence of Laceration of the Perinæum on the Uterus, and the Operation for its Repair.—Dr. W. GILL WYMAN, of New York, read a paper with this title. He said that there was no doubt there was much yet to learn about the results of laceration of the perinæum and the best way to repair it. He had been making extended studies in this direction, and believed that he had arrived at the best method of operating on old lacerations where there was a proctocoele present. It was generally supposed that in all ruptures into the rectum there must necessarily be displacement of the uterus; but this was a mistake. If the rupture was in the median line, even if through the sphincter, there was no displacement of the uterus. If the levator ani muscle was separated from both sides, then the continued straining at stool would eventually bring down

the uterus. The anatomical facts in regard to the various axes—abdominal, pelvic, rectal, and anal—were not properly understood; if they were, it would be plain why displacements occurred in certain forms of lacerations and not in others. The function of the perinaeum was to sustain the relation of the rectum and anus, and not to keep the uterus in position. Where the perinaeum was destroyed, the continued forcing downward of the contents of the rectum pushed the intestine forward, there being no resistance, and formed the proctocele. To restore this condition it was necessary to reunite the ends of the muscle and pull the sulci on either side up over the proctocele, so as to strengthen the wall and thereby prevent the pouching. The straining at stool was what caused the retroversion and prolapse; first the uterus became wedged in between the uterosacral ligaments, and, as it was not able to free itself, further straining caused further extrusion of the uterus. As to the form of operation for the relief of this condition, the speaker did a modified form of Tait's operation, which consisted of a narrowing of the posterior wall of the vagina by a picking up of certain tissues. The levator and fascia fibers in the depressed sulci on each side must be denuded and drawn up. One must cut down until he came to dense white tissue, for in many cases there would be no red muscular fibers, because the muscles were atrophied. These structures must then be drawn up firmly with silver-wire sutures, the last three or four being entirely within the vagina. The sutures were left in for two or three weeks.

Dr. C. P. NOBLE, of Philadelphia, had found that when tears went through the rectum they were invariably in the median line, and this was perhaps the reason why the uterus did not come down. He had also found that in incomplete lacerations, where the fibers of the levator ani had separated on both sides in an uneven manner, there was usually displacement, but he did not attribute the displacement so much to straining at stool as to occupation. He was always able to find the fibers of the muscle and suture them, and he did not think that the support of the pelvic tissues depended upon a little white fibrous tissue, but upon the great levator ani muscle.

Dr. A. J. C. SKENE, of Brooklyn, agreed with Dr. Wyllie that complete lacerations did not cause prolapse. If the pelvic floor was uninjured, but the structures above were torn, there was a sagging of the tissue with a dragging which would bring down the uterus. Another reason why there was no prolapse in median-line laceration was that compensation took place in the levator ani muscle whereby the pelvic floor would be drawn up. Many, no doubt, had seen complete laceration where the perinaeum would be drawn tightly up under the pubes. He did not recognize the condition of so-called proctocele, which he found in these cases was a mass of hemorrhoidal veins and the operation best adapted to its correction was that recommended by Emmet. He had seen many cases in which it was impossible to find any more clear tissue to suture.

Dr. Wyllie could not see how it would be possible, if the perinaeum was torn up on the sides, for an operation done in the median line to do any good. He operated differently in different cases.

The Ultimate Results of the Treatment of Retrodisplacements by Pessaries. Dr. FRANK DAVENPORT, of Boston, presented the following paper for discussion. There was no doubt that there was a certain pressure on the pessary, but was there not compensation? Most persons could wear a pessary without discomfort, and all that was required was a certain amount of skill in the fitting. Many objected to their pessaries on the ground that they caused frequent irritation, from the pessaries, saying that they were a source of trouble and were very unpleasant, and also that they did not cure, and would have to be worn for the rest of the patient's life. He gave the

history of fifty selected cases of retroversion that had been treated by pessary. Ten were completely cured and the uterus was in a normal position. Nine were benefited and symptomatically cured. Thirty-one patients now went without the pessary; their uteri were in normal position, but they still had some symptoms. This treatment gave twenty per cent. of absolute cures. Of the ten cured patients seven wore the pessary a year and a half. The shorter time the displacement had lasted the quicker the cure. He thought that these results were worth trying for, and where many patients objected to operation a fair trial of several months or a year should be given to the pessary.

In summarizing Dr. Davenport said that in cases of uncomplicated retroversion or retroflexion of the uterus the choice lay between shortening the round ligaments and the wearing of a pessary. That a cure, either anatomical or symptomatic, could be assured. Where a cure was effected it took place usually in about a year. A large proportion of those not cured could wear a pessary and did not want an operation. The operation for shortening the round ligaments should be limited to those who could not wear a pessary or in whom vaginal treatment was inappropriate, and as a supplementary proceeding to other operations.

Dr. E. W. CROMBIE thought that the usual statistics given on this subject were valueless. He thought that it was too often that the symptoms were treated and not the cause. He was satisfied that few cases required Alexander's operation. If, after fair trial of every form of treatment, including pessaries, the uterus would not remain in position and the symptoms were not cured, then the abdomen should be opened and the trouble looked for and corrected.

Dr. CLEMENT CLEVELAND, of New York, said that he believed in the use of the pessary and in the Alexander operation, and thought that there was a field for each. The pessary was chiefly useful in retrodisplacements. A most beneficial operation was the Alexander, and he believed that it had come to stay. It had always proved a success in the speaker's hands, and he had done the operation over forty times with most gratifying results.

Dr. G. M. EDEBOHL, of New York, said that the discussion was as to the relative value of the Alexander operation and pessaries. He maintained that the only cases where pessaries could be used was where there were no adhesions and where the tubes and ovaries were in a normal condition. In the other class of cases, which were by far the largest, it was his plan to shorten the round ligaments. He had operated in this manner seventy-five or eighty times and in not one had the uterus returned to retroversion. There was always an anatomical cure, but not always a symptomatic one.

Inflammation of the Ureters from a Medical Standpoint.

Dr. MARSHALL D. MANN, of Boston, read a paper on this subject. From a very careful observation over a long period of a great number of cases the author was inclined to believe that inflammation of the ureters was much more common than was generally supposed. Some of the causes were pelvic cellulitis, suppuration in and around the pelvic organs, gonorrhea, and labor. If after long the patient continued to pass pain and pressure over the ureters, without expression of inflammation, it would always be well to examine the ureters. If the result was not found that there was not present, it might be suggested. However, the ureters, located about an inch from the fund, had probably been the site of the inflammation, and the inflammation had passed into the ureters, also, as a consequence. Patients were sometimes treated for catarrh of the bladder when the true condition was ureteritis. An examination would usually show the inflammation of the ureters and looking at them long enough to show the inflammation, ureteritis might follow to the perineum.

He thought that in many cases where pain and discomfort had persisted after removal of purulent tubes they were due to unrecognized inflammation of the ureters. He did not think that the ureteritis was so much due to continuity as to a common cause. In anteflexion, where patients complained of vesical irritation, it was not so much due to the displacement as to the dragging on the ureters; an examination of the urine would prove this. If the digestion was disturbed the urine was abnormal, and, this secretion passing through the ureters, they would be irritated. If inflammatory symptoms were set up, we should look for the exciting cause in the genital organs. The first symptom noticed in these conditions would be a slight catarrhal condition in the urine. If the ureters were palpated they would be found thickened and sacculated. The bladder was not generally affected, but there might be cystitis. Pain was usually on the left side. There might be complications in the pelvic organs. The most common symptom was frequent micturition. The pain was burning and cutting and was much aggravated about the menstrual period. One of the most curious symptoms was a distaste for water. There would be bilious attacks and great depression of spirits. Sometimes the attacks would be intermittent. Pain would at times be so severe that the patients would be unable to walk. The diagnosis was to be made first by an examination of the urine and by palpation of the ureters. The urine would be scanty and it would contain pus and blood cells and it would be very acid in reaction. The mucus would be very slightly increased. The treatment was in three forms—constitutional, local, and surgical. The first consisted of hot baths, dry hot air, and the free use of water and of alkalies; secondly, medicines to increase the secretion of urine and antiseptics that might be carried through the urine down the ureters; thirdly, the making of a vesico-vaginal fistula, which sometimes gave marked relief.

Dr. J. M. BALDY, of Philadelphia, thought that there was not such a field of practical application as we should be led to suppose from Dr. Mann's paper. It might be possible that there were many mistaken diagnoses, but for his part he thought the disease rare. Of course, when the disease was discovered, he thought the only thing to do was to give alkalies. He did not see how the sweating of patients was going to benefit them, as that process concentrated the urine, the very condition that was to be avoided.

Dr. A. P. DUDLEY, of New York, thought that there was one class of cases where a mistake in diagnosis might be made, and that was between appendicitis and ureteritis. He believed that the disease did begin in the ureter itself. Pressure upon the ureter from the various forms of disease of the appendages might cause obstruction of its caliber and cause disease higher up in the ureters. He had knowledge of such a case.

Dr. Fourn thought that the disease often occurred in young women, where there was no particular disease of the appendages. He reported a case where he had operated for stone in the ureter and where no stone was present. The patient died and at the autopsy it was found that there was a dilated ureter. He emphasized Dr. Mann's statement that the causes were mainly diastasis and began at about fifteen conditions which caused irritation of the ureters. He had good results from high enemata of water, passing three pints and as much as the quantity of water and diastasis. Everything seemed to come to a good end but sometimes.

Symphysiotomy versus the Induction of Premature Labor.—Dr. CHARLES J. JEWETT, of Philadelphia, read a paper on this subject. He gave an historical review and statistics of induced labor and the recent results with symphysiotomy, showing the great interest due to the mother by the latter operation. He thought that in symphysiotomy a great contri-

bution had been given to modern obstetrics, that it was a life-saving method for both mother and child. In contracted pelves it was better practice to do this operation early than to induce labor and perhaps lose the child. The mortality of children born from four to six weeks before term was comparatively slight and no mothers were lost. These results could not be obtained with premature induced labor. He preferred in the flat pelves to let the patient go to near term and then do a high forceps delivery. He did not favor version.

Dr. MURRAY, of New York, looked upon the induction of premature labor and symphysiotomy as elective operations. He thought that the induction method in general practice was far from being absolutely safe. If both operations were to be done by skillful persons they would offer much each in its own way. The advantage in symphysiotomy was that the patient could be allowed to go to full term.

Dr. CHARLES JEWETT, of Brooklyn, did not think that we yet knew the possibilities of the operation, but that as far as he could judge if done before exhaustion of the mother it ought to be perfectly safe.

Dr. GEORGE J. ENGELMANN, of St. Louis, thought that symphysiotomy was pre-eminently a much more satisfactory operation than any other that had yet been devised for saving mother and child. Given a suitable class of cases, the results ought to be perfect. He thought nothing better could be offered, where solid tumors impeded the descent of the child, toward making a larger passage through the natural channel.

Dr. McLEAN had been struck with the value of Dr. Noble's remarks, and he agreed with him in everything with the exception of his objections to version. He did not think it at all necessary with this operation to lose children with either version or the forceps.

Dr. NOBLE believed that version was a frequent cause of death to the children, but did not affect the mortality of the mothers.

The Influence of Minor Forms of Tubal and Ovarian Disease in the Causation of Sterility.—A paper on this subject by Dr. THOMAS A. ASHBY, of Baltimore, was read by title.

New Inventions, etc.

AN OPERATING TABLE.

By JOHN B. HARVEY, M. D.,

ATTENDING SURGEON TO THE TROY HOSPITAL, TROY, N. Y.

The accompanying description and photographs will illustrate an operating table which I had made for my own use at the Troy Hospital.

The entire length of the top when extended is six feet and a half, and it is divided into three parts—that portion at the head, which we shall specify as *a*, being half a foot in length, the body portion (*b*) four feet, and the foot drop (*c*) two feet. The width is twenty-two inches.

A is attached to *b* by means of hinges and held in position by a double arm and clamp in such a way that it may be dropped entirely or may be brought to the horizontal when extra length is necessary, or may be elevated to a right angle (above the horizontal).

The body portion (*b*) is four feet in length, and fastened at one end to the belt of the table by means of three strong hinges.

The foot drop *c* is fastened to *b* by means of buried hinges.

and a circular joint. The table may be adapted to any position ordinarily required in surgery.

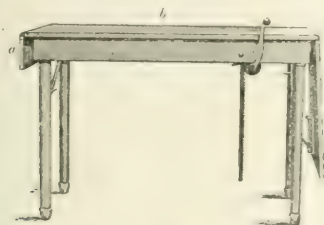


FIG. 1

Fig. 1 represents an ordinary table four feet in length, with a head drop (a) of six inches, which may be elevated to the horizontal, increasing the length to four feet and a half, and a foot drop (c) of two feet, which may also be elevated to the horizontal, making the total length of the top six feet and a half.

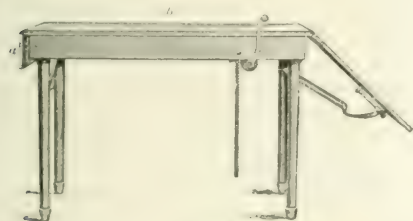


FIG. 2

Fig. 2 shows the foot drop (c) elevated to an angle of fifty-five degrees.

Fig. 3 illustrates the head (a) and foot (c) pieces in a vertical position with an elevation of the lower end of the body por-

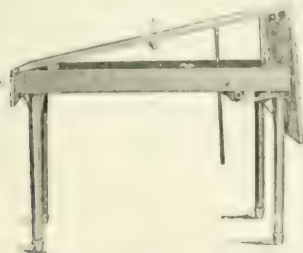


FIG. 3

tion. (The necking is desirable position when elevation of the head is necessary.)

Fig. 4 shows the position of Trendelenburg by means of a rack and gear, the rack being twenty-four inches long and fastened on its oscillating center on the lower end of the top member from the lower end. The gear, which has five hundred and three quarters in diameter, is attached to a worm mounted on a crank. Three revolutions rotate the entire lower part of the table twenty-seven inches, and it is held in place at any point by a dog in a circular gear. The head drops with patient in body position. At the Trendelenburg position the head is as shown in Fig. 5, for Fig. 5. This is accomplished by means of an arm which is raised automatically and moves patient smoothly.

All these positions may be attained without difficulty and without

in any way disturbing or changing the position of the patient. Trendelenburg's position was secured with perfect ease when a

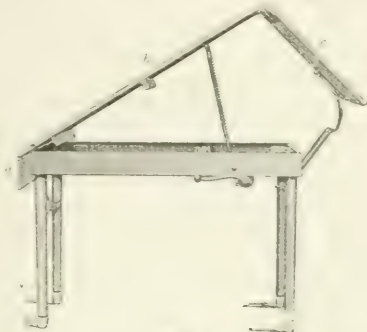


FIG. 4

patient weighing two hundred and fifty-five pounds was on the table.

Fig. 5 shows a table six feet and a half long.

The advantages alleged for this table are its adaptability to general operative work, and at the same time possessing the

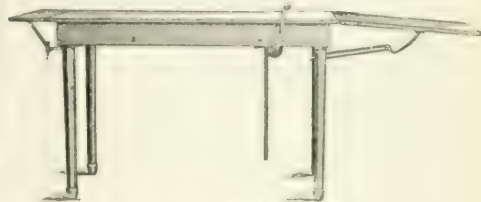


FIG. 5

necessary facilities for special lines of work. We have a table in Fig. 1 while may be used in perineal or rectal work. If a high elevation is desired, as shown in Fig. 3, it may be obtained in a moment.

Fig. 2 furnishes us a table which is suited to a large number of abdominal cases, and if Trendelenburg's position is desired at any time during the operation we may secure it without interfering in any way with the patient. The table is free from complications and can not get out of order, is perfectly stable and durable. Every part of it can be reached with the greatest facility, so that with little trouble it may be kept perfectly aseptic. It is also inexpensive.

Miscellany.

The Influence of Certain Natural Agents on the Virulence of the Tubercle Bacillus.—In No. 336 of the *Proceedings of the Royal Society* there is an account of a paper by Mr. Robert Dr. Arthur Bennett, and Mr. Stephen G. Bennett, who state that the virulence of bacteria is not destroyed by heat, but that it is destroyed by dry and moist heat, and that a different treatment for preserving the virulence of the tubercle bacillus, that is, by means of a mixture with the tubercle bacillus, but they do not say anything about the

wise had sanitary conditions, did not destroy the virus. The following results of similar experiments by the authors were given: 1. A rabbit had been inoculated in the peritoneum with fresh sputum, and after fifty-five days well-marked tuberculosis had appeared. 2. After the sputum had been exposed to light and air for forty-five days, in June and July, the rabbit was inoculated, but had shown no tuberculosis after eighty-six days. 3. The sputum had been exposed in an air-shaft at dusk during the same season, and slight tuberculosis had shown itself after eighty-six days. 4. The same sputum had been exposed at the same time in air and light, and then inoculated under the skin of a guinea-pig. No distinct tubercle had shown itself in eighty days. 5. The same methods had been employed, only at dusk, and advanced tuberculosis had manifested itself in eighty days. 6. Another sputum had been exposed in April for sixteen days to little or no air, in darkness, and well-marked tuberculosis had appeared after forty-two days. The authors then endeavored to determine how short a period of exposure to light and air would be sufficient to destroy the poisonous action of the microbe, and guinea-pigs had been selected as the most susceptible animals to test this question.

Pure cultivations of the bacillus had been prepared and had been found to be active by frequent inoculations. Small portions of this material had been spread in a thin layer upon pieces of sterilized paper, and arranged in circles of about two millimetres in diameter, in order to give every opportunity for the action of the elements. They had then been exposed in a glass room, with free access to light and air, for diminishing periods of time—namely, from fourteen to two days respectively. The meteorological observations had shown that the results of the first few days only had been of importance. The control experiments showed that the bacilli used after this date had lost their virulence, and the results of two experiments were doubtful on that account; but another experiment had been made with a very virulent specimen, as had been proved by the inoculation of two guinea-pigs, with paper infected with the same quantity of the same cultivation, and kept the same length of time, but not exposed to sunlight. In both cases advanced tuberculosis had been produced in forty-four days. Only one experiment could be entirely relied upon, and in this case, after four days' exposure to air and twelve hours and a quarter of sunshine, there had been no result from the inoculation.

In the next series of observations it had been determined to allow tuberculous sputum to dry, first, in light and air; second, in air and darkness; third, in a close cupboard. Fresh sputum, rich in bacilli, had been obtained and exposed in watch-glasses. The first specimen had dried in four days, the second in eight days, and the third in nineteen days. The first and second specimens had been closed up as soon as they had become dry and kept until the third specimen had been ready, and then portions of the sputum had been scraped off the glasses and inoculated into guinea-pigs directly after scraping. The results of these experiments had been somewhat anomalous, the speaker said, and he could therefore draw no decided conclusion from the present experiment.

In another series of observations the sputum had been spread upon paper and had then dried more rapidly at the ordinary temperature, and then the paper had been kept in a close cupboard. It had then been scraped and partly inoculated into tuberculous dust before being exposed to the same conditions as before. In this case it might be supposed to be more readily attacked by the elements. An attempt had been made to measure the amount of bacilli still in sputum, but owing to some circumstances it was not possible to do so. The quantity of air which had passed over the sputum, in the second, and had then been in contact with the dust, was presented to the dust, being completely dried. Three out of

experiments had been made, as follows: 1. Papers had been placed in the dark, close cupboard. 2. Papers had been placed in the air-shaft of a draught-closet in a dim light, pure air only passing through it. 3. Papers had been exposed to light and air for three days in February. The rate of air current had been about a thousand feet an hour, and the sunshine recorded had been an hour. The amount of tuberculous dust was so small that portions of the paper had been inserted together with it under the skin. In the first set of experiments sputum which had been kept only one day in a closed, dark cupboard, after drying on paper, had produced well-marked tuberculosis in thirty-one days; sputum kept under the same conditions, but exposed to a little air for thirty-five days, had produced distinct local tuberculosis in twenty-three days. In the second set of experiments sputum which had been kept in the draught-closet for three days in a current of air (about a thousand cubic feet an hour) in darkness, at the ordinary temperature, had given well-marked tuberculosis in thirty-two days. In the third set of experiments sputum which had been exposed to light for three days, with an hour of sunshine, good ventilation, and a maximum temperature of 50° F. (minimum, 38°), had produced no tuberculosis after forty-six days. Other sputum had been exposed to the light for seven days with fifteen hours of sunshine and brisk ventilation. Temperature, maximum 88°, and minimum 29°. No tuberculosis had appeared after twenty-two days. Again sputum had been exposed to the light for two days after having been kept dry for four weeks. There had not been much exposure to sunshine, and ventilation had been slight. Temperature, maximum 60°, and minimum 22°. The same result had been obtained.

These researches, said Dr. Ransome, had an important bearing upon the question of the limits of the infectiveness of tubercle.

It had long been known that the disease was most common in the dirty, badly-ventilated dwellings of the poor. There were few, if any, records of the transmission of the disease in clean, well-lighted, and well-ventilated houses or hospitals, even in those for consumption. Long before Koch's discoveries, and before the disinfection of sputum had been practiced as it was now, the conveyance of the disease under these conditions had been recognized by many to be one of the rarest events.

So far, said the speaker, as the results that had been obtained with sputum extended at present, they showed that finely divided tuberculous matter, such as pure cultures of the bacillus or tuberculous dust, in daylight, and in free currents of air, was rapidly deprived of virulence; that even in the dark, although the action was retarded, fresh air had still some disinfecting influence, and that in the absence of air, or in confined air, the bacillus retained its power for a long period of time.

The Effect of Ether on the Kidney.—In the September number of the *University Medical Magazine* there is an article by Dr. George B. Wood entitled *The Elimination of Ether and its Relation to the Kidney*, a thesis for which the Isaac Ott prize of the University of Pennsylvania for 1894 was awarded. The author gives accounts of seventeen experiments on animals, undertaken for the purpose of ascertaining the precise action of ether, when administered as an anæsthetic, on the kidney, whether healthy or diseased. He thus summarizes the chief conclusions that he has arrived at: 1. It has been proved that ether exists as such in the free state in the blood, but, although it must come in close relation with the kidney, it is not excreted by that organ to any appreciable extent. Nevertheless, it has been demonstrated that in ether anæsthesia the kidney becomes congested and, on intravenous administration, the cells show cloudy swelling. The cells of the convoluted tubules are af-

fected primarily, and the tufts and collecting tubules do not show any change unless the anesthesia has been prolonged. It is probable that repeated administrations of ether, if kept up long enough, would cause desquamation of the epithelial cells. 2. The local effect of ether upon the kidney already diseased must be very deleterious, for any unhealthy organ will not stand wear and tear like a normal one. In cases where uræmic poisoning was beginning to manifest itself it was shown that there was a liability to sudden death during ether anesthesia, due to the action of the ether on the already depressed centers of respiration.

The author gives it as his belief that in cases of nephritis surgeons should give ether only with the greatest care, and watch continually for any signs of failure of respiration. An important point, he says, is that the ether should be given very gradually, and when during the anesthetization it is necessary to use more ether the inhaler should not be put directly on the face at once, but gradually brought close to it while the anesthetizer watches the patient's breathing carefully.

A Case of Recovery after Threatening Symptoms from Snake-bite.—In a recent number of the *Indian Medical Record* Mr. P. Fitzpatrick, of the British Indian Medical Service, gives a short account of the case of a Hindu woman, about thirty-five years old, who was brought to him with the statement that she had been bitten by a poisonous snake about an hour and a half before. She was semi-conscious and in a state of collapse, her teeth were clinched, froth exuded from her mouth, her arms and legs were rigid, distinct fang punctures were visible on the little toe, and the site of the bite was surrounded by ecchymotic discoloration. Shortly after the woman's arrival a dead snake about eighteen inches long was brought for Mr. Fitzpatrick's inspection. It was of the kind called by the natives *scheetha* or *courrailla*, which they are said to consider quite as venomous as the cobra. It appears that the woman had been subjected to native treatment, for Mr. Fitzpatrick found it necessary to clear her mouth of *nim* leaves and to remove from the wounded limb the sacred mud, amulets, and charms that had been applied to it. He then applied compression to the femoral artery at the knee and also applied a ligature just above the seat of the bite. He cut into the punctured part freely and encouraged the bleeding. He also rubbed into the cuts a mixture of strong ammonia water and potassium permanganate. Besides this, he gave a hypodermic injection of five minims of the British solution of strychnine at once, and gave two more at intervals of two hours at the same time using warmth and friction to the extremities. The patient rallied gradually, and the next day she was reported to be as well as ever, having insisted on going home the evening before.

The Treatment of Habitual Constipation.—The *Hospital* for September last contains an article on this subject in which the author remarks that the general causes of constipation are such as produce either weakness of the peristaltic movement of the bowels or an increased hardness of the fecal contents. Among the conditions leading to deficient peristaltic action a predominant place must be given to paralysis, which is either by the patient. "Nurses of the cells of Naples, hospital, however, and often reported cases of constipation, had to be treated one of the most and frequently used and most effective of all muscular coat. Want of exercise has also an important bearing on the subject. Diabetic cases are chiefly responsible for the production of such hardness of the feces, and the addition of the gentlest of large quantities of food then can support the bowels. The results of the body tend to be in the frequent intestinal action. A very frequent cause is a deficiency in the secretions of mucus, which is an important constituent. Too saving in the treat-

contained in it, has very little value in liquefying the intestinal contents; alcoholic drinks also are deficient in this respect. A diet of which meat forms a large part, or in which farinaceous foods predominate, favors constipation, and bread made of refined flour loses not only much of its nutritive value, but also much of its stimulative power. The habitual use of rich or indigestible food is also a cause of constipation.

The result to be aimed at in the treatment, says the author, is to secure for the patient natural and regular evacuations, and to render him independent of aperients as far as possible. Brisk exercise, preferably on horseback, should be insisted upon, and the abuse of active purgatives must be stopped. A larger proportion of vegetables and a still greater one of wholesome fruit, with less meat, will in many cases be indicated. Fresh fruit should be eaten at breakfast to a greater extent than is usual, and stewed fruits, such as prunes or apples, are excellent laxatives. Fat or oily substances in the form of butter, olive oil, bacon, etc., are often desirable. The occasional use of brown bread and oatmeal is effectual. The importance of a sufficient supply of fluids should be impressed on the patient, and it is often important that a tumblerful of water should be taken in the morning before breakfast, and in severer cases another at night. It may be hot or cold, according to circumstances, but should not be merely warm, as this may excite vomiting; it is also better to sip it at intervals while dressing. The author recommends aids of a mechanical nature, such as small enemas of glycerin, olive oil, or simple cold water. Another method is the employment of abdominal massage either by the hand or by a weight. This method also reduces obesity, itself a factor in the production of constipation from the loss of power it causes in the action of the abdominal muscles. It should be kept in view that the object for which drugs are used is not to produce purgation, but to act as tonics to the intestine in order to restore its natural function, and that their employment is to be discontinued when this has been attained. Among remedies of this class aloes holds a high place. Its action is slow, and chiefly on the colon and the lower bowel. It may, with advantage, be combined with nux vomica or belladonna. Cascara is also a useful intestinal tonic when given in small doses, full doses being too large to produce the most useful action of the drug. It may be combined with the liquid extract of licorice, which assists its action.

Saline aperients or mineral waters are less adapted for the treatment of habitual constipation, but the milder forms may be taken diluted, instead of plain water, in the morning, the amount being reduced and plain water substituted as improvement takes place. It is necessary, says the author, to warn patients against rhubarb, as its secondary astringent action renders it wholly unfitted for habitual use; mercurial preparations, also, should not be used for this purpose. Care and skill are necessary in the treatment of habitual constipation, and it should be impressed on the patient that it is not a trivial complaint to be treated by an occasional pill; there is much more which leaves his last state worse than his first, and renders rational treatment a much more difficult task.

Ethereal Extract of Male Fern in the Treatment of Cysticercus Disease.—Dr. R. Feletti, of Catane, contributes an article on this subject to the *Medical Journal for August 1894*, in which he states that he has used this extract in thirty cases with good results. The first case was that of a man, thirty-one years of age, who had been ill for four years with a tumour in the lower part of the abdomen, which he was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The second case was that of a woman, thirty-five years of age, who had been ill for three years with a tumour in the lower part of the abdomen, which she was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The third case was that of a man, thirty-three years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which he was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The fourth case was that of a woman, thirty-two years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which she was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The fifth case was that of a man, thirty-four years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which he was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The sixth case was that of a woman, thirty-six years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which she was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The seventh case was that of a man, thirty-seven years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which he was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The eighth case was that of a woman, thirty-eight years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which she was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The ninth case was that of a man, thirty-nine years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which he was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern. The tenth case was that of a woman, forty years of age, who had been ill for two years with a tumour in the lower part of the abdomen, which she was treated with various remedies. The tumour was found to be a cysticercus, and the patient was cured by the use of the ethereal extract of male fern.

with the apathy and slowness which accompanied all the man's actions. His strength had diminished; the dynamometer marked twenty-six on the right hand and twenty-one on the left hand. The tendinous and cutaneous reflex motions were maintained and were prompt. The susceptibility of the muscles was normal; the sensory organs and their functions were normal, and the sense of feeling was nearly so. The electric sensibility appeared diminished on the left side. The electric excitability on the same side failed to respond to the galvanic current; to the faradaic current, however, the side was sensitive, except at the left peroneal nerve. Another thing which attracted the author's attention was the presence of innumerable nodules which extended over the body, some under the skin and others in the muscles; the majority of them were as large as an olive, hard, smooth, and with a slight lateral invagination. The thoracic and abdominal organs were normal. No proglottides or eggs were found in the fecal matter. During the man's stay at the hospital he had headache, vertigo, and partial convulsions, with or without loss of consciousness.

The extract was administered, and in all he took two hundred and seventy grains, and, although it was not well borne, there was a notable decrease in the size of the subcutaneous and intramuscular cysticerci. There was very little amelioration of the cerebral troubles; vertigo and headache persisted, although the weakness and apathy diminished slightly. His condition, however, gradually became more aggravated and death occurred about a month later. From an observation of this case, in which the treatment had diminished the subcutaneous and intramuscular nodules, the author concludes that the extract of male fern has some action upon the cysticercus. In cerebral cysticercus infection its action may be doubtful, since aggravated symptoms had followed the slight amelioration in the case mentioned, although Dr. Feletti himself thinks that its efficacy can not be denied, and he attributes the man's death to the morbid processes created in the brain and in the meninges by the parasites, notwithstanding their destruction.

The second case was that of a man who was attacked with cerebral cysticercus. The patient had vertigo accompanied with vomiting, epileptoid convulsions, and loss of consciousness. Sodium and potassium bromides were administered, but the vertigo persisted. The patient suffered from headache and giddiness, and nodules appeared on his body. The author attributes the nervous troubles to the irritation which was caused in the brain by the cysticercus, and he prescribed a daily dose of nine grains of the extract, which was well borne by the patient. A month later the nodules disappeared, the pain in the head became less, but the giddiness persisted. Some months later the convulsions returned, accompanied with contractions of the muscles and loss of consciousness; bromides were again administered and the nervous troubles disappeared. In this case, says the author, the disappearance of the nervous symptoms may be attributed to the bromides, although it must be noted that they had already been given before the other treatment was begun, either of good results.

The author concludes from his observations that the ethereal extract of male fern is a sure remedy for cysticercus disease in the muscles and under the skin, and is every probably the best of the known. The nervous and cerebral troubles are not cured, however, and must be treated by the patient, and should be treated by the physician, during the treatment.

Women and the Bicycle.—The *Boston Medical and Surgical Journal* of this paper contains an editorial on the subject of the bicycle. It would seem to be a common-sense thing to say that if a woman is to ride a bicycle, she must be in good health, and the opinion of a physician on this subject may be of some interest. In order to

form an accurate opinion, he says, the age, the weight of the woman, whether she can ride without falling off, what kind of clothes she intends to wear, and what condition her digestion is in must be ascertained. A woman who is young, quick, and not too clumsy or fat may ride longer distances than one who has not these advantages. More good is derived from the bicycle if the exercise is taken regularly and according to the laws governing athletic exercises, and if the distances traveled are not too long. An important consideration is the appearance of the rider. Her self-possession and general feeling of well-being are improved by an appropriate dress, the details of which would require too much space to describe, but as a general rule it should be insisted upon that corsets should be discarded if it can be done without prejudice to the fit of the dress. A wise and proper use of the bicycle as a means of recreation, the author says, has been followed by good results in a number of cases, but, on the other hand, an appreciable amount of harm has been done by riding too much and in badly chosen localities. From this it will be seen, the article goes on to say, that a medical opinion should not be given without careful consideration of each individual case, and that no definite rule can be laid down which will cover all contingencies.

The Management of Eczema.—At the recent meeting of the Section in Dermatology of the British Medical Association, a report of which appears in the *British Journal of Dermatology* for September, Dr. Malcolm Morris, of London, read a paper on this subject in which he presented a summary of the general results of his own experience in treating the disease. With regard to internal remedies, he said, the less they were employed the better. In ordinary chronic eczema, where the patient's health appeared to be unaffected and there was no reason to suspect constitutional dyscrasia or neurotic disturbances, local treatment only should be employed. If internal remedies were given, the selection of the particular drugs used must be governed by certain definite indications. When the lesions were acutely inflammatory, antimony was most useful. The speaker began by giving from ten to thirteen minims of the vinum antimoniae, repeating the dose in an hour and, if necessary, again two hours later. The interval between the administrations was gradually increased, the dose being, at the same time, reduced to six minims. This should be given three times in twenty-four hours until a distinct subsidence in the intensity of the inflammation became manifest. The indication for antimony was the presence of arterial tension; on the other hand, depression was a positive contra-indication of this drug. If a neurotic element was clearly present, sedatives and nerve tonics must be combined with local treatment. The indication for the use of sedatives was great nervous excitement accompanied with sleeplessness. If, however, the neurotic element showed itself in the form of depression, nerve tonics were indicated. The speaker had found quinine the most useful. If there was much discharge, belladonna might be combined with the quinine. Phosphorus was another drug of great value in nervous depression, and strychnine also was useful. The indication for arsenic was a deficiency of nerve force combined with absence of acute inflammation in the lesions. If the eruption was of an actively inflammatory type, arsenic was positively contra-indicated. If the disease showed a marked tendency to frequent exacerbations, ergotine might be useful. Malnutrition, weakness, and anemia were indications for cod-liver oil and for general tonic treatment on ordinary principles. Iron, however, was contra-indicated by the presence of acute inflammation. In women menstrual derangement of uterine diseases must be remedied and hysteria or the disturbances incident to the climacteric

period should be combated by such remedies as musk, valerian, etc.

With regard to the diet, the speaker stated that, in his opinion, diet had no influence at all, except indirectly. If a constitutional condition underlay the eczematous process, the dietetic restrictions indicated in the circumstances were called for. If the lesions were of an acutely inflammatory type, the diet should be limited in quantity. Apart from these indications, the speaker had seen no reason to think that restrictions of diet had had any good effect; on the contrary, he had seen a "lowering" regimen do positive harm by weakening the patient. Anything, however, which disordered the gastro-intestinal tract or which caused acidity, insomnia, flatulence, palpitation, or vaso-motor disturbance must be avoided. The same principle applied to drinks, but here strict moderation in quantity was necessary.

With regard to the principles on which local treatment should be carried out, Dr. Morris said that he aimed, first, to destroy micro-organisms; secondly, to protect the inflamed surface from the air and from further microbe invasion; and, thirdly, to soothe irritation. In the application of local remedies the strength must be tempered to the tolerance of the patient's skin, and the application must be kept continuously in contact with the affected parts. The best remedy for local use in dry chronic eczema, especially of seborrhoeic origin, was sulphur, and after that resorcin. These drugs not only destroyed the micro-organisms, but gave rise to exfoliation of the horny layer and brought away with it the microbes which had penetrated to the deeper parts of the epidermis. When inflammation was acute, ichthyol was particularly useful. Other antiparasitic remedies were salicylic acid, white precipitate, boric acid, and carbolic acid. When the discharge was profuse, a weak solution of boric acid was useful; if itching was troublesome, weak lotions of carbolic acid or tar were most beneficial.

A change of climate was often productive of good in overcoming the tendency to recurrence of eczema in those predisposed to the disease. Dr. Morris knew of no special indications in this respect, except that, eczema being a catarrhal disease, climates that were apt to produce catarrh should be avoided. A too bracing climate should be avoided; the same might be said of sea air. Sea bathing very often produced a recurrence of the disease, but it sometimes undoubtedly counteracted the tendency to relapse.

With regard to mineral waters, Dr. Morris's conclusions were as follows: 1. No spring known to him had any specific action on eczema. 2. Such virtue as sulphur waters possessed, applied externally, was due chiefly to their parasitic action and partly to the temperature at which they were applied. 3. Such virtue as sulphur, chalybeate, or arsenical waters possessed, when taken internally, was due to their action in regulating the processes of metabolism, in increasing the number of red corpuscles in the blood, and in giving tone to the nervous system.

Potassium Iodide in Actinomycosis. In the *Lancet* of 1893, Vol. 1, p. 10, August 2nd, there is an article on this subject in which the author remarks that this disease is rare in France, but still is not infrequently observed. There have been cases in this country, but the disease is not observed in that country since those reported by Lebert in 1847 and by Kossel in 1870.

M. Thomsen, of Utrecht, recorded the case of a patient in whom potassium iodide in the treatment of cancer attacked with metastatic growth. The treatment was very successful, the metastases subjected to it having disappeared. The same year M. Thomsen published his experiments with a single patient. During the past two years American veterinary surgeons

have employed potassium iodide with excellent results. Out of one hundred and eighty-five animals treated with it, one hundred and thirty-one were completely cured; the others probably would have been if the remedy had been given in time. On another occasion fifty-three animals were given the potassium iodide and all were cured.

This remedy was first prescribed in Holland, not only for actinomycosis of the tongue, but for its other forms, and excellent results were obtained. The following observations were published in the *Revue de médecine vétérinaire* in 1896, by M. Nocard: In the first case there was actinomycosis of the roof of the mouth, with perforation of the submaxillary region and extended and profound infiltration of the same region. Potassium iodide was given in doses of from twenty-two to thirty grains a day, and immediately there was a notable amelioration, which continued until recovery. The second case was one of cæcal actinomycosis. A tumor was found in the region of the cæcum from which pus escaped when it was opened. There was a cavity between the intestines, large enough for the finger to penetrate, which was packed with iodoform gauze. Three weeks later the patient left the hospital apparently cured. At the end of a month, however, he returned, as the wound had opened; yellow grains were found in the pus which escaped. From fifteen to twenty-two grains of potassium iodide were given every day, and in less than a month recovery was complete.

This treatment was prescribed by M. Meunier in a case of cervical actinomycosis accompanied with marked atrophy. Twenty-two grains of the potassium salt were administered every day, and an ointment of the same drug was used. In this case recovery was rapid. Another observation, published by M. Netter in the *Union médicale*, 1893, is of the greatest interest, says the writer, not only because it shows the powerlessness of surgical intervention, but because it shows the efficacy of potassium iodide. It was a case of thoracic actinomycosis, which is well known to be always fatal. The amounts prescribed varied from fifteen to ninety grains a day, and the effect was almost instantaneous and miraculous—within a month recovery was assured. The total amount of potassium iodide taken was nine hundred and fifteen grains. Other cases are cited by the author, who draws the following conclusions from these observations: 1. That actinomycosis has nearly always been fatal. 2. That the powerlessness and uselessness of surgical intervention have been recognized in the majority of cases. 3. That at the present time potassium iodide is a remedy which assures recovery in this disease.

With regard to the mode of administration, M. Netter advises that it should be given for five consecutive days, allowing an interval of two days to pass before continuing it: this method should be kept up until recovery. With regard to the dose, it need not necessarily be a large one in order to obtain a cure. M. Netter gives in the beginning ninety grains a day, but he rapidly reduces this to from forty-five to thirty grains. The patient must be watched as to the symptoms of iodine poisoning, such as coryza, conjunctivitis, acne, etc.

Potassium iodide, says the author, can at first appear to act as a parasite which is contrary to commonly held views of this drug, this opinion does not hold, in view of M. Nocard's experience, which affords no evidence of actinomycosis cured by iodine, and the general action of potassium iodide had been already discussed in some length, and it was suggested that potassium iodide acts in the usual manner, and causes the destruction of the parasite.

Wagner's Music and its Physiological Effects. The *Proceedings of the American Association for the Advancement of Science*, 1893, contain an article published by the *Webster Institute*, which has called

remarks that it is well known that music exercises a quieting influence in certain mental diseases, and that it has been made use of medically in some mental affections.

An American physician, Dr. Warthin, of Michigan, is credited with having made an experimental study of the physiological effects of music on the human organism. Having noticed, he said, in listening to Wagner's music, that the audience appeared to be in a condition strongly analogous to, if not identical with, that of hypnotism, he had concluded that, in order to ascertain the exact effects of music on the physiological functions of the human body, it was preferable to hypnotize the subjects, in order to do away with all exterior impressions. He took five men and two women, who were willing to submit to the experiment. All were in good health and enjoyed music, although they did not possess well-developed musical sensibilities. In their normal condition music did not produce any great emotion or any appreciable physiological effect. The subjects were placed in a room with a piano, and, after falling asleep in the ordinary way, they were hypnotized, whereupon Dr. Warthin made the following suggestions: "You are dead to everything in the world except the music which you are going to hear. You will feel or know nothing except this music. When you awaken, you will recall the sensations that you have experienced." After the subjects were thus prepared, one of Wagner's pieces was played, and the physiological effects on the pulse, the respiration, etc., were observed and registered. The subjects were afterward awakened, and notes were taken of their sensations. For example, the effects on Dr. M. — were as follows: The pulse at first became rapid and fuller, and the tension increased; the pulsations rose from 60 to 120; then the pulse became very rapid and the tension diminished. At the same time the respiration increased from 18 to 30 a minute. The face showed great agitation; the entire body moved; the legs were raised and the arms beat the air, and the body was covered with a profuse perspiration. When the doctor was awakened, he declared that he had felt the music, not as a sound, but as a general sensation, as a sort of excitation produced by "rushing furiously through space." The same sensation was also experienced by another subject, and the same effects on the pulse and the respiration were noted, but there was no movement of the body or any change in the facial expression. The skin was covered profusely with perspiration. It was noticed that the same selection played during a normal sleep produced no effects comparable to the results observed during hypnotism, and did not determine any physiological modification.

The Vauhalla music gave rise at first to a slackening of the pulse with increased tension, afterward extreme acceleration of the pulsations, and a diminishing of the tension. The sensation experienced by the subject was that of "sublime grandeur and calm." The music from the scene where Brünnhilde calls Sigmund to Vauhalla gave rise to marked modifications of the pulse, which became weak, irregular, and very small. The respiration diminished in frequency, and became sighing; the face was pale and covered with a cold perspiration. The sensations experienced by the subject were those denominated "death"; no other definite impressions could be described.

Dr. Warthin noticed that, in order to produce hypnotism, music was superior to all other ordinary methods. In this respect, the nature of different selections was rather variable. Thus, one of the subjects could not be hypnotized except with a certain selection from Liszt's music, and before the fifth measure was reached he was and nearly completely hypnotized.

Warthin's music has been accused, says the writer, of producing hypnotism. But Dr. Warthin's experiments have shown that this suggestion is entirely without foundation. A person pass-

sages from Die Walküre and from Tristan and Isolde, which had been particularly criticised from this special point of view, had given rise in hypnotized subjects to sensations of "desire" and of "frenzy," but not the least sensual excitation or erotic suggestion. Dr. Warthin recognized, however, that, aided by verbal suggestion, the music of these passages might produce similar effects, and that then the sensation of "desire" would approach that of "physical desire"; but the musical sounds themselves were incapable of provoking a condition of genital erethism.

These are the most interesting facts noted by Dr. Warthin in the course of his experiments. From a therapeutic point of view, there is not much to be gained from them. The author remarks that he would not fail in respect to Wagner, but he thinks that the results which appear to be most clearly set forth in these experiments are the sudatory and hypnotic effects of his music. In less scientific terms, the music from Die Walküre produces, above all, perspiration, and that from Tannhäuser induces sleep.

Ingrowing Nails.—At a recent meeting of the *Congrès de l'Association française pour l'avancement des sciences*, a report of which is published in the *Progrès médical* for September 1st, M. Félix Régnauld, of Paris, read a paper on this subject. He remarked that different writers had attributed this trouble to many causes—such as lymphatism, improper shoes, etc.—without defining the relative importance of each. Some writers had regarded shoes as the principal influence in causing ingrowing nails, although Dionis had observed ingrowing nails among barefooted monks, and Binaud had seen it among tuberculous patients who were confined to their beds. Tight shoes had deviated the great toe and bent the nail, but not sufficiently to cause ingrowing, and, although it might be curved like a claw and sunk deeply into the flesh, it did not necessarily give rise to ulceration. Poniet had shown that lymphatic persons who had small, flat nails and a thick great toe were often subject to ingrowing nails. The constitutional condition was the primary cause; shoes played only a secondary part and applied only to one class of ingrowing nails, which occurred in healthy, non-strumous persons, the great toe of whom had been more or less altered by the kind of shoes worn.

M. Régnauld thought that traumatism and dirt were predominant factors in giving rise to cultures of common microbes in the pus in the groove of the nails. Sometimes, also, a contusion of the great toe had caused ingrowing nail. Traumatism might occur after cutting the nails. The speaker had observed two cases, one where the nail had been improperly cut and the skin broken; several days afterward the nail had begun to grow in. In the other case, that of a young man who had his nails attended to in a bathing establishment, suppuration had set in eight hours afterward. This pathogenic knowledge, said the speaker, had an important bearing in relation to the treatment; if ingrowing nails were properly cared for at the beginning, they were easily cured by constant bathing in carbolyzed water and by antiseptic dressings.

Sudden Death in Bicyclists.—At a recent meeting of the *Académie de médecine*, an account of which appears in the *Journal des praticiens* for September 5th, M. L. Petit reported three cases of sudden death due to bicycle-riding in patients affected with heart disease. The first case had been that of a man, sixty years old, who had appeared to be healthy, and the second that of a man who had recovered from an attack of typhoid fever. Dr. Petit thought that old people, and those affected with cardiac troubles, should not indulge in bicycle-riding, as it might be attended with serious and sometimes fatal results.

DR. C. A. L. REEDS' ARTICLE ON KRAUROSIS VULVAE



FIG. 6.

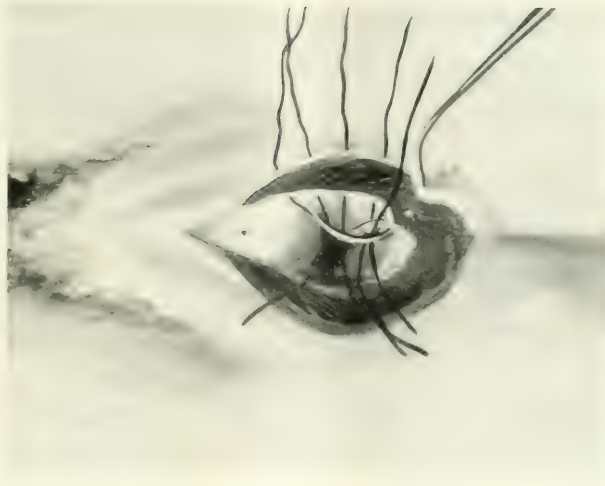


FIG. 7.

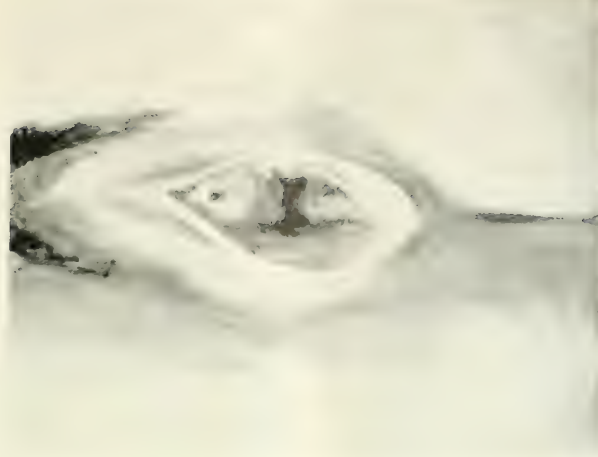


FIG. 8.

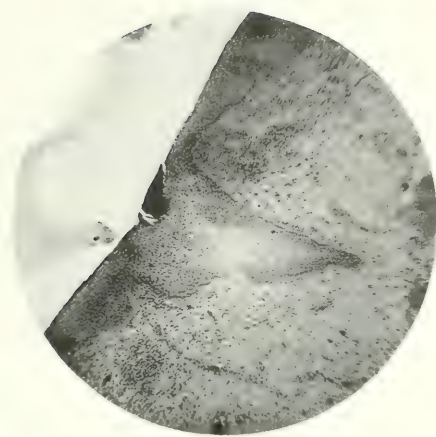


FIG. 4.

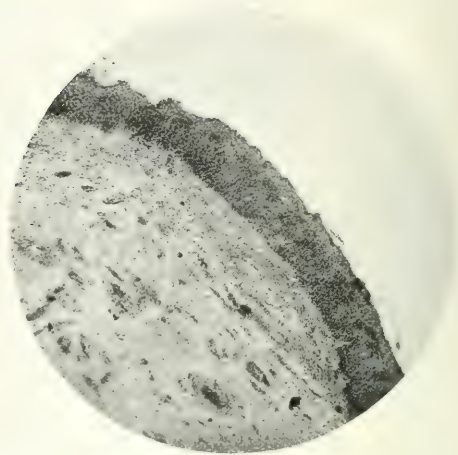


FIG. 5.

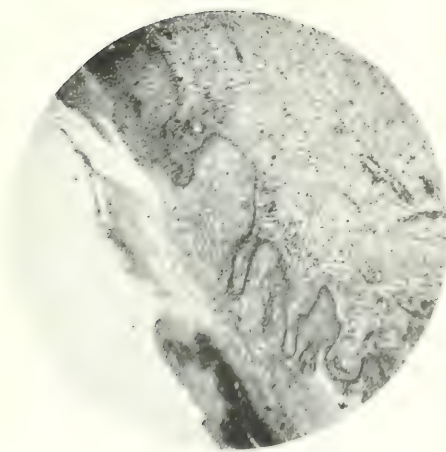


FIG. 2.

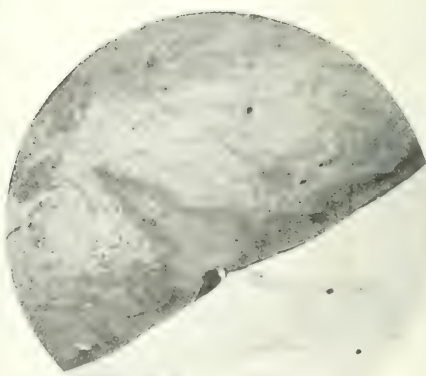


FIG. 3.

Original Communications.

PROGRESSIVE CUTANEOUS ATROPHY
OF THE VULVA (KRAUROSIS VULVÆ)

CONSIDERED WITH
SPECIAL REFERENCE TO ITS OPERATIVE TREATMENT
REPORT OF CASES. ILLUSTRATED*

By CHARLES A. L. REED, A.M., M.D.,

PROFESSOR OF GYNECOLOGY AND ABDOMINAL SURGERY
IN THE CINCINNATI COLLEGE OF MEDICINE AND SURGERY
(MEDICAL DEPARTMENT OF THE UNIVERSITY OF CINCINNATI)

THE disease which comprises the title of this paper has become generally known by the name of *kraurosis vulvæ*. This name, which was coined by Breisky, simply signifies shrinkage of the vulva, the initial term being derived from the Greek word *κράωρος*. The chief objection to be urged against this terminology is that it is not sufficiently definitive. As employed it may and naturally does imply shrinkage of any or all of the structures which collectively comprise the vulva, when, as a matter of fact, the diseased changes which it is intended to indicate are restricted to the skin and its immediate connective tissue covering either a particular area or all of the pudendum, including the fourchette and perineum. I have never been able to observe either clinically or microscopically the extension of this disease to the so-called mucous membrane within the introitus vaginæ, nor have I been able to discover from any published reports satisfactory evidence of the occurrence of the disease in this latter locality; but even if it were true that it does thus occur, either primarily or by extension, the almost complete histological identity of the lining of the vagina at the inlet with the adjacent skin leaves practically unmodified the statement that the disease is essentially one restricted to the vulval integument. Couple with this the additional facts—namely, that the disease is atrophic in its ultimate manifestation, and that it always persists until the involved areas of integument undergo the extreme changes which shall be presently described—I am convinced that for English-speaking people the term *progressive cutaneous atrophy of the vulva* must be more satisfactory than the Greek derivative which has already acquired a prominent place in the literature of the subject. I feel that I am confirmed to an important extent in these views by the Germans, who, although employing the word *kraurosis*, speak of the disease as *Haut atrophie am pudendum mal. lœv.* and more particularly by Sanger, who, since the preceding lines of this paragraph were written, has designated the disease "*Progressive cutaneous and subcutaneous atrophy of the vulva (Haut atrophie der Vulva)*."

The history of the disease, at least so far as most of the literature is concerned, is very recent. The credit of having first described its clinical characteristics must be accorded to our illustrious fellow-countryman Dr. Joseph I. Weir, of New York, who in 1854 described it as an

ichthyosis of the vulva. Tait, in his more recent work, alludes to the same condition as having been observed by him at about the same time that Weir's description was published. No account of the pathology of the disease was published until 1885, when Breisky, of Prague, reported* twelve cases with careful study of their pathological features. Although the disease had doubtless been observed for a long time, even prior to 1875, there does not seem to be evidence that it was looked upon as an entity in the clinico-pathological category until the publication of the studies by Breisky. There have been but few contributions to the subject since that time, but all of those which have embraced original observation have tended to establish the condition as a distinct disease, a conclusion which has been resisted only by such *doctrinaire* writers as have seen fit to give attention to the matter. The most authoritative expression on this phase of the question, however, is that which emanated from the *Gesellschaft für Ginekologie und Gynäkologie zu Berlin*,† at its meeting in February of the current year, on which occasion the consensus of opinion, based upon the fullest consideration of recorded facts and upon the widest personal experience of the participants in the debate, was to the effect that the disease in question was entitled to recognition as a distinct entity.

The ætiology of this disease is very obscure. It occurs without the previous existence of any other disease of the skin of the vulva. In Orthman's cases no sugar could be found in the urine and there were no histories of syphilis. In one of my own cases, occurring in a woman of fifty-six, there was the history of syphilis in early life, but this history was not confirmed by any later manifestation of the specific complaint. I am inclined to look upon the facts in this case as having been rather of chance occurrence than as having any causal relationship. It is indeed fairly established that this atrophy of the vulva is not of syphilitic origin, a fact which is sufficiently confirmed by Lewin,‡ who stated that he had treated between seventy thousand and eighty thousand women in his service at the Charité, and that in all that experience he had not encountered a single case of *kraurosis vulvæ*. Gonorrhœa and a chronic non-specific vaginal discharge are recognized by some observers as probable ætiological factors. The disease is more common in women after forty, a fact which would seem to identify it with the usual trophic changes of senility. The fact that it occurs in early life, during the active continuance of menstruation, and in the absence of any indication whatever of previous venereal disease, dissociates it from necessary connection with those changes of nutrition, either local or general, which occur in connection with advanced age. In this connection, Oomsen has stated,§ that in a limited number of cases the atrophic changes were possibly suggested by the interruption of the uterine appendages, and I have observed similar cases of

* Read before the American Association of Obstetricians and Gynecologists at Toronto, Ontario, September 20, 1885.
† N. Y. Medical Jour., March, 1894.

* *Wiener Klin. Wochenschr.*, 1885, 18.
† *Archiv. f. Gynäk.*, 1891, No. 11, pp. 201-212.
‡ *Ibid.*
§ *Ibid.*

my own cases (Case VI). In one of Javonsky's cases the disease seemed to start in the cicatrix of a previously lacerated perinaeum. I am forced to conclude, after carefully studying the details of such published cases as have come under my observation, that the conditions which have been suggested as causal are so various as to seem entirely accidental. So far as microscopic research is concerned, none of these conditions have been demonstrated to have an etiological value. The fact, however, that the disease, although essentially inflammatory in character, is limited either to circumscribed areas in the vulval integument or else to the entire pudendal skin, and the additional fact that it occurs without adequate demonstrable local cause, forces us to consider either the peripheral trophic nerve filaments, or else the ganglia whence they originate, as the possible seat of initial lesion.

The pathological and clinical features of these cases are characteristic. The first changes obvious to the naked eye consist of small vascular areas around the introitus vaginae. These areas are not elevated, as if seats of merely inflammatory engorgement, but are slightly depressed relatively to the adjacent epithelial surfaces. They are exquisitely painful to the touch, and efforts at sexual intercourse are generally agonizing and futile. About this same time careful inspection will reveal a narrowing of the vaginal orifice, associated with diminished elasticity of the structures. The cutaneous or muco-cutaneous surfaces will now be observed to have lost a certain proportion of their pigment, giving them a more or less translucent appearance, which increases until, as in one of my cases yet under observation, it becomes so transparent that the larger capillaries and minute ecchymoses may be readily discerned beneath it. The skin thus affected becomes tense, effacing in a more or less pronounced degree all the normal folds of the vulva and narrowing the vaginal orifice until, in the case of a multipara, as Mr. Tait says, "incredulity may be excused when the patient states that she has borne children." (See Fig. 1.) This shrinking is one of the leading features of the disease, and it may be manifested in one locality rather than in another, according as one locality rather than another is the center of the diseased activity. It may be stated, however, that whatever particular structure may be victimized by the atrophic process, it does not follow that the disease will become thus limited, but that, on the contrary, it has a tendency to progress until all the vulva is involved. Brody speaks of the shrinking (*Schrumpfung*) particularly of the nymphæ, which certainly show liability to this disease. Fusion of the labia minora and the labia majora, in the latest of the apparent disappearance of the former, has been observed in two of my own cases, and by Ohmann-Dumesnil.† I also also record a distinct narrowing of the mons Veneris. The introitus from the mons Veneris to the vaginal orifice may be so far as to be obliterated all the normal folds, the entire clitoris being absorbed by a depression rather than an elevation. In a case by Schultz,

recorded by Ohmann-Dumesnil, there was complete disappearance of the labia, both large and small, associated with complete alopecia vulvæ, with the exception of a small tuft of hair on the mons Veneris.

The microscopic examinations in my own cases were made in my private pathological laboratory by my associate, Dr. Henry W. Bettman. A summarization of his careful notes may be presented as follows (Fig. 4)*: There is marked hyperæmia of the integument. Hemorrhages into the substance and upon the surface are noted. The epithelium is of very irregular thickness, being here and there replaced by extravasated blood. The condition of the epidermis varies in different sections and in different places in the same section. Its leading characteristic may be designated as extreme irregularity. In some places it is of normal thickness, in others it is almost entirely or entirely eroded. In some places there are small rents or fissures, the surface epithelium at such points being lost or displaced, while irregular cracks extend a short distance into the corium. The number of such fissures is small. In some places the epidermis is covered by bloody extravasation; in others it is lifted *en masse* from the corium by an effusion of blood. The effused blood lies, as a rule, directly upon the surface of the eroded epithelium (see Fig. 2), although it is occasionally found between the epithelium and corium. The blood-cells are very well preserved and stain beautifully with eosin; here and there the blood has taken on the reddish-brown color characteristic of old blood effusions. Here and there are epithelial "pearls," not very different from the well-known epithelial nests of epithelioma, but are smaller and less typical. The corium presents two conditions—viz.: 1 (see Figs. 3 and 4). *Earlier Stage*.—Marked by cellular infiltration and in some places pronounced hyperæmia. Small round cells everywhere invade the subepithelial tissue, in some places diffusely, in others forming irregular collections. The papillæ are infiltrated, often occupied entirely by small round cells, so that none of the original connective tissue can be detected. In places the papillæ are covered with a very thin layer of epidermis, in others they are entirely bare, granulation tissue extending to the surface. There are no hemorrhages into the corium. 2 (see Fig. 5). *Later Stage*.—Cellular infiltration less marked, and characterized by an almost total disappearance of papillæ. The disappearance of the papillæ is unquestionably due to the organization and shrinking of the granulation tissue. Various stages can be noted in any given section. There were no observations of nerve endings. Orthman † studied five cases from the clinic of Martin in Berlin. In one case microscopic examination was made. The tissues were found to be partly hypertrophied and partly atrophied, thus demonstrating the earlier and later stages of the disease in the same section. The rete Malpighii was markedly diminished, and in some instances entirely obliterated. There was absence of papillæ, and the wave-like arrangement of the corium was occasionally en-

* From the Hist. and Path. Lab., Cornell Univ. Med. Coll., Ithaca, N. Y.

† *Ann. Otol., Rhinol. & Laryng.*, 1900, 9, 3, 333, 334.

‡ *Ibid.*, 1901, 10, 1, 10.

* I am indebted for the photomicrographs training this article to my friend Professor M. H. Fletcher, M. D., D. D. S.

† *Zentralblatt für Gynäkologie*, 1901, 27, 22, 226.

tirely lost, the latter being dense and sclerosed, resembling scar tissue. There is occasional small-celled infiltration, increasing from above downward; hyperplasia of tissue at marginal zone where healthy skin begins; horny layer of epidermis much wider, the cells lying in many strata over the widened rete Malpighii; papillæ and entire corium increased in respect of width, and infiltrated with small cells. In another case, which was ulcerated, his recorded observation is as follows: "Section through large ulcer in upper third of right labium majus; on inner side, hypertrophy of epithelium of epidermis, gradually diminishing toward and disappearing at ulcer; papillæ also obliterated at ulcerated part. On outer side, the same process reversed; epithelia increasing up to hypertrophy; corresponding with the gradual disappearance of epithelia on both sides of the ulcer, the papillæ increase, often penetrating to the superficies of the epidermis; there is a complete small-celled infiltration of subcutaneous fatty and connective tissue, filling up clefts in latter, usually in a direction perpendicular to superficies; a few lumina of vessels seen on the tissue compressed and narrowed by surrounding infiltration and hypertrophy." Orthman also failed to observe the nerve endings in any of his sections. Orthman also made careful bacteriological studies of his cases, but found only the micro-organisms which usually occur about the vulva and vagina.

The symptomatology of progressive atrophy of the vulva varies in different cases. It usually happens that the first complaint of the patient is with reference to dyspareunia. The painful puncta of the early stage and the painful inelasticity of the later stage are necessary impediments to the copulative act. Yet in the absence of the sexual relation the disease is not of itself particularly painful; on the contrary, in its later stages there seems to be a loss of sensation in the entire diseased area. Itching is a very inconstant symptom, one more frequently absent than present. In a study of thirty-five cases by my friend Dr. Ohmann-Dumesnil,* thirteen patients are recorded as being afflicted with itching varying from moderate to intense; Jamesky's were not afflicted with this symptom; Orthman's,† which were not included in Ohmann-Dumesnil's table, were five in number, only one of whom applied for relief on account of itching and intense burning. This symptom occurred in two of the writer's own cases, but was restricted to the earlier stages of the disease. Heilmann, however, records it as persisting after repeated curettings. Tait speaks of the disease as being painless in its last stages. The objective features of the disease, upon which the chief diagnostic importance is placed, have been recounted in the paragraph relating to pathology.

In the earlier stages the disease is liable to be dismissed with the convenient diagnosis of *Angioma*. Careful inspection will, however, reveal the sensitive vascular areas just within the hypertrophy, and will show the already established shrinkage of the vulval integument. During the stage of itching, sometimes absent, the disease

may be confused with neurofibrosis vulvæ, as described by Webster.* As the former disease is atrophic and the latter hypertrophic in character, a careful inspection will reveal the difference even in the early stages. When the areas of atrophy begin to be well defined, the kraurosis may be mistaken for ichthyosis. This is all the more confusing because of the disposition of the shrunken patches to assume the form of polygonal plaques. This, however, according to the observation of the writer, is true only as relates to the atrophic areas as a whole; but these latter when once formed do not fissure and subdivide as is true of ichthyosis. In the latter malady there is a tendency to epithelial exfoliation which is distinctly not true of progressive atrophy.

Mr. Tait † says that "the patient should always be informed that the progress of the disease will extend over years, that it will certainly get well in time, but that treatment from time to time will give her relief." From this author's description of the final stage—i. e., of parchment-like induration of the diseased integument—it must be inferred that what he means by recovery must relate to the subjective symptoms rather than to restoration of the parts to their normal physical condition. On the other hand, the opinion of all observers is to the effect that without operative relief these cases are progressive and permanent. We are never justified in promising cure by any sort of treatment, although pronounced relief has been realized. In two of the author's own cases, treated by excision, marital relations were satisfactorily re-established after an interruption extending over a series of years, the remaining vulval structures manifesting only normal characteristics.

The treatment may with propriety be divided into palliative and curative. The former consists in the application of various medicaments for the relief of pain. Carbolic acid, by virtue of its primary or anæsthetic effect, affords temporary relief; but its secondary or escharotic effect leaves the terminal nerve filaments even more exposed than before, with a corresponding increase of discomfort. Tait speaks of a solution of neutral acetate of lead in glycerin placed on cotton between the nymphæ as having a soothing effect when used at bedtime. He recommends cocaine. The application of stick nitrate of silver, repeated until the degenerated structures are destroyed and replaced by patches of cicatricial tissue, mitigates the suffering but does not arrest the progress of the disease. Curetting to the extent of scraping away all the shrunken skin has been practised by Heilmann, but after treatment is a pronounced cure, having involved in one case as many as ten repetitions of the severe operation, and as the result of the treatment must involve the deposit of cicatricial tissue over a considerable area, it is, at best, a palliative. The method is liable to be considered as a loss of position.

The curative treatment is that of excision. The writer applied this process in an indurated case several years ago. The disease in this instance had only advanced to the

* *N. A. Clin.*, 1884, vol. 1, p. 100; *Med. Mon.*, 1885, p. 100.

† *Practical Gynaecology*, 2d edition, 1887, p. 100; *Proc. Roy. Soc. Med.*, 1888, p. 100.

* *Lab. Rep.* of the *Hygienic Inst.*, 1888, vol. 1, p. 100.

stage of vascular areas. These were located around the intrecitus, from both sides of which an ellipse of mucous membrane was removed, the denuded margins being brought together by interrupted sutures. Temporary relief was realized, but the disease was manifested in the integument after seven months. Martin, reported by Orthman, inaugurated the practice of more complete excision. The technique is not in the least difficult, although it varies according to the location of the disease. In all instances it involved the complete removal of the diseased tissue and the approximation of the raw margins. The usual laxity of the deeper tissues about the vulva readily admits of this plastic manœuvre, although in one case, involving the vestibule, it was found necessary to liberate the lateral flaps by secondary incisions half an inch distant, after which the skin glided readily over the pubes and was approximated by a central line of sutures. The secondary incisions were then readily closed in the same way. If this operation is done after the limits of the disease have become well established, no fear need be entertained of recurrence. This has been true in the cases of both Martin and the author, although from the case above alluded to it is evident that if excision is practiced in the early stage of the disease further manifestations may occur beyond the field of operation. Orthman reported* five cases successfully operated upon by Martin in this way, and Martin has since reported† three additional cases, all of them successful. The operation and its results are fairly well represented in Figs. 6 and 7 respectively, the case in question (Case III) having been one in which the disease was manifested particularly in the nymphæ, fourchette, and perinaum. The free-hand drawings by Mr. Hugh Horsfall are quite as successful as can be expected in handling so difficult a subject.

I beg leave to append brief summaries of the following illustrative cases:

Case I. Incipient Kraurosis Vulvæ; Premature Operation; Subsequent Development of the Disease beyond the Area of Operation. Mrs. B. Hamilton, O., aged forty-two years, the mother of two children, came to me in October, 1889, complaining of painful coitus. I examined her carefully and found the seat of pain resident just within the ostium vaginæ. There seemed to be spasmodic contraction of the canal when I made an effort to introduce my finger. Careful inspection revealed the presence of several red spots, very painful to the touch, which were arranged in a row on either side of the vagina at a point corresponding to the location of the obliterated caruncles. I removed these red spots by excision, taking a small ellipse of tissue from either side of the mucous membrane. The operation was followed by prompt cure and relief of the symptoms. The patient soon after removed to Cincinnati, and was not seen for some time. I was very surprised to learn from the New York Letter, published in 1892, that after a few months of improvement she again experienced pain at coitus, and that the disease had recurred and the married life had become impossible. The operation was not one that could be termed a cure, and I have had confirmation in the early stage of the disease in some of the best cases. That the patient

was afflicted with incipient progressive atrophy of the vulva at the time of my operation, and that the disease has since become manifested in its usual form.

Case II. Incipient Kraurosis; Premature Operation; Subsequent Development of the Disease beyond the Area of Operation.—Mrs. H., who had one child eight years old, came to me in June, 1893, from southern Kentucky. She complained of a more or less constant drawing pain about the vulva, some distress on urination, and extreme discomfort at sexual intercourse. Her marital relations had indeed been rendered almost impossible during the last four years. On examination the ostium vaginæ was found somewhat narrower than usual. A number of extremely painful carunculae were found just within the orifice of the vagina. To touch one of these with a probe would elicit complaints of pain and spasmodic contraction of the vagina and of the vulval and perineal muscles. This circumstance prompted me to look upon the vulval contraction as spastic and of reflex character, depending upon the carunculae as the exciting cause. I accordingly advised excision of the latter. This was done at my hospital the day after her admission, in the presence and with the assistance of Dr. Johnston and Dr. Pottenger. An ellipse of tissue was removed from either side of the vagina, just within the ostium, extending from the meatus urinarius to almost the median line of the posterior vaginal wall, and each one wide enough to embrace the carunculae, all of which were arranged in a line around the vagina, just at its outlet. The wounds, one upon either side, were closed by interrupted sutures, and the patient made an excellent recovery, leaving the hospital two weeks later. At the time of her dismissal there was not the sign of a remaining caruncle, and the tenderness referred to them had quite disappeared.

On resuming her marital relations, however, she discovered that the introitus was yet unyielding, and that intercourse was accomplished with but little more satisfaction than formerly. She returned to me the following December. Examination then revealed the fact that the vulval contraction was not spastic but atrophic, and that the disease had made decided progress during her absence. There was absorption of the natural pigment and there was marked disappearance of the normal elasticity of the skin. The vulval orifice was greatly constricted. The nymphæ had shrunk considerably, but the most marked change was about the fourchette, which had shrunk until its margin was less than half an inch from the meatus urinarius. The true character of the case was now declared, although the limitations of the atrophic area had not yet become clearly outlined, as sometimes occurs in this disease. As soon as this takes place I shall urge the curative operation, the most satisfactory results of which were realized in the next case.

Case III. Kraurosis Vulvæ of Ten Years' Development; Excision of Atrophic Area; Recovery.—Mrs. X., married; never conceived. She was referred to me by Dr. Dulaney in 1894. She had submitted to abdominal section twice—once for the removal of uterine appendages and once for the relief of adhesions—both times at the hands of a distinguished local surgeon. She had also been operated upon for hemorrhoids, with which she was yet afflicted. Sexual relation had been impossible for ten years, during all of which time she had complained of a drawing, pinching, burning pain in the vulva, but no itching. On examination the vulval orifice was found to be extremely narrow. The nymphæ could be traced only by lines of fusion with the labia majora, and the integument covering them was almost destitute of pigment, and had a glossy, varnish-like appearance. The same state of integument existed on the fourchette, which had so thoroughly lost its elasticity that it was ruptured superficially by an attempt to introduce my finger into the vagina, but it was observed that the fissure

* *Zentralblatt für Gynäkologie*, 1890, vol. 16, pp. 336-337.

† *Centralblatt für Gynäkologie*, 1892, vol. 18, pp. 336-337.

thus caused did not bleed. A row of deep caruncule entirely encircled the ostium vaginæ just at the beginning of the vaginal mucous membrane. This patient entered my hospital, and was operated upon the next day in the presence of Dr. Dulaney and my assistants.

The operation consisted in making an incision through the integument just beyond the outer margin of the affected area and extending from one side around to the other, and another incision beginning at the same point, but extending into the vagina just within the caruncule and terminating on the opposite side at the end of the first incision. The intervening integument was then removed and the cut surfaces approximated by interrupted sutures. It was noticed in making this incision and on removing the diseased skin that there was a great dearth, practically an absence, of connective tissue beneath, and that the muscular tissue was to be observed on either side of the vulva. The result was union by first intention. In two weeks the patient stated that she had become unconscious of the vulva. Three weeks later I introduced two fingers into the vagina quite painlessly. The specimen removed from this case comprises the basis of investigations by Dr. Bettman already quoted.

CASE IV. Kraurosis Vulvæ complicated with Elytritis Adhæsiva; no Operation upon the Former; Case yet under Observation.—Mrs. S., of Montgomery County, Ohio, aged fifty-two years, married, but had never conceived, was sent to me by Dr. K. D. Huggins, of West Alexandria. She had elytritis adhæsiva, a strong band having formed between the left wall of the vagina and the cervix. Several other bands constricted the vagina in its upper third. The ostium vaginæ was very narrow, admitting the finger only with difficulty and at the expense of great pain. Several patches denuded of epithelium were noticed just within the introitus. The labia minora were fused with the larger lips. The skin covering the vaginal half of the perineum and the inner margins of the lips was glistening and inelastic, and contained several fissures, giving it the appearance of ichthyosis. There had been but little itching, and that had been experienced in the early history of the case.

I operated on the intravaginal adhesions first, which I was prompted to do because the symptoms referred to it were of the more urgent character, and I did not do both operations at the same time chiefly to avoid having the resulting discharge from above contaminate the field of operation on the vulva, and thus defeat union by first intention. She is yet under observation, and contemplates submitting to operation for the cure of the vulval atrophy at a very early date.

CASE V. Kraurosis Vulvæ associated with Contracture of the Uterus; Operation; Recovery.—Miss R., aged fifty years, came to me two years ago, complaining of a painful condition about the vulva. She was a well nourished, very stout woman. By her own confession she had been a confirmed masturbator during nearly all her life. On inspection the condition of the vulva was found to be as follows: There was fusion of the prepuce to the clitoris and the fissure of desiccation between this organ and the labia was practically obliterated by the shrinkage of the skin. The labia minora were fastened together by a line of fusion with the labia majora, except at the upper extremity, where for an inch or so an opening existed. It was estimated that they yet had a partially distended orifice. The labia majora, which were very fat, were drawn toward the inner margin of the skin, which was glistening and inelastic. The prepuce had so far disappeared from the vulva that the large clitoris could be distinctly seen without it. Upon the inner surface of either labium majora there were numerous painful fissures. At the external distended area could be observed evidently denuded of epithelium, and

very red and very painful. The orifice of the vagina was very narrow indeed, hardly admitting the little finger. The patient complained of an intense sense of drawing in all parts of the floor of the pelvis. The flexor muscles of the thigh were always tense. In view of her history and the fact that the contractions complained of began in the vulvo-perineal region, where they were yet more distressing than elsewhere, I was disposed to look upon the muscular condition as reflex and the condition about the labia majora as a dermatitis due to mechanical irritation. As she was yet experiencing erotic sensations of an aberrant sort about the clitoris, and was, in consequence, engaging in solitary indulgences, I concluded that this was the center of irritation, and accordingly excised the atrophic area from the vestibule to the mons Veneris, incidentally doing a complete clitoridectomy. After her recovery from this operation she experienced less pain in the region operated upon, but, contrary to my expectation, the irritation on the inner aspect of the labia persisted and the tendency to contracture did not abate. I then had Dr. Hoppe see the case with me. It was his opinion that so far as the muscular contracture and the tendency to the same were concerned the essential lesion was in the motor centers, and that although the case had a large hysterical element, it would probably be progressive. The subsequent course of the case has justified both the diagnosis and prognosis just recorded. The contractures are now complained of not only in the floor of the pelvis and in the thighs but in the neck and arms.

CASE VI. Kraurosis Vulvæ following Extirpation of the Uterine Appendages and associated with Marginal Urethral Caruncle.—Mrs. L., aged thirty-eight years, widow, English, gave birth to a child at seven months' utero-gestation some years ago. She was taken by her husband, who was a physician, to consult Sir Spencer Wells, Mr. Lawson Tait, and other distinguished surgeons relative to pain in the pelvis. She was advised to submit to extirpation of the appendages, but afterward conceived. With a nervous system seriously shattered from reverses, she came to America in the capacity of a nurse and has rendered conspicuous service in a number of our leading hospitals. In 1892 she submitted to an abdominal section for removal of the uterine appendages in a hospital in Maryland, from which she convalesced very slowly. She finally came into the hands of my friend Professor Reamy, suffering from serious symptoms of adhesions about the bladder and was kindly referred by him to me for operation. A secondary abdominal section was accordingly done at my hospital, November, 1893, in the presence of Professor Reamy and my assistants. This feature of the case, while very interesting (and will be utilized as the basis of a report upon another subject) is only alluded to in this connection because of its possible etiological significance. An additional detail, which I wish to mention for the same reason, consists in the fact that the abdominal sear in both the primary and secondary operations underwent marked hypertrophy. The first operation, according to the patient's own statement, was followed by pain in the breast; the second closure, however, was attended by no such trouble. Another feature of importance was that during convalescence, and quite three weeks after operation, she suddenly had a rise of temperature, which promptly subsided with the application of the ice-bag to the abdomen (33° F.), although a temperature of 100° to 102° was not infrequently observed. These observations are very interesting for the first time, and were followed up by a thermometer in each axilla and in the rectum. These attacks and the subsequent convalescence were followed by the development of the characteristic type of the present case. After her convalescence from the second abdominal section she called for attention to a very painful condition of the neck and arms. Upon inspection I

found marked cutaneous atrophy of the latter, with a caruncle at the mouth of the former.

This case is one in which the history of the cutaneous vulval changes post-dates the first abdominal section and at once raises the question as to the causal significance of the removal of the uterine appendages with the accompanying disturbance of the nerve supply to the remaining genital organs. This question has been raised by other writers, recently by Olshausen; but for my own part, and in view of the fact that the vulva gets its supply of nerves from the superficial branches of the internal pudics and from the branches of the lesser sciatic, nerves which are not disturbed by the excision of the uterine appendages, I can not see that the question has any serious basis of probability. It is true that trophic changes are presided over by branches of the sympathetic, but no known distribution of the nerves of that system can enable me to understand how the removal of the appendages can interfere with the vaso-motor or trophic supply to the pudendum.

Knowledge relative to progressive cutaneous atrophy of the vulva is too nebulous to justify final conclusions. That which seems to be conclusively demonstrated may be summarized as follows—viz.:

1. Progressive cutaneous atrophy of the vulva (kraurosis vulvæ) is a distinct disease.
2. It is of very rare occurrence.
3. It is essentially inflammatory in character, differing from other inflammations of the skin in the marked progressive atrophy which succeeds the stage of hyperæmia and infiltration.
4. It is limited in its manifestations to the vulva.
5. It is manifestly not of syphilitic origin.
6. Its aetiology is so obscure as to suggest a primary causal lesion in the trophic-nerve supply to the vulva.
7. Affected areas may be successfully excised.

A NEW VAGINAL DOUCHE WITH AUTOMATIC OUTFLOW.

By NATHAN G. BOZEMAN, Ph.B., M.D.,
GYNÆCOLOGIST TO ST. FRANCIS'S HOSPITAL, HARTFORD,
AND ST. MARY'S HOSPITAL, BOSTON.

It has been my endeavor for several years to perfect a system of vaginal douching which can be applied conveniently and without the douche pan. The object which I have in view is to flush the vagina with a small quantity of hot water and evacuate before it flows over the perineum. The patient's clothing and the bedding are thus protected from moisture and it enables me to use the water at 130° F., hotter than is tolerated by the skin but comfortably borne by the vaginal mucous membrane, after slight cooling in passing through the apparatus. Protracted douching of this kind I have found relieve pelvic pain and protracted absorption of phlegm exudates about the uterus, ovaries, and tubes. It also dilates the urine and washes the vesical mucous membrane when there is a veno-vaginal fistula, made for physiological rest of the bladder for the cure of cystitis and urethritis.

The apparatus which I have devised and used to my entire satisfaction is well represented in the cut. It differs from the air and water irrigator and drain only in the form of the reservoir (see the *New York Medical Journal*, June 1, 1889, and May 27, 1893). Here a soft rubber bag is employed and the outflow is not constant; it is four ounces per minute at the beginning and it gradually diminishes. The bag holds two quarts of water which runs out in twenty minutes. The apparatus commends itself for its compactness, and it certainly minimizes the quantity of hot water required for a protracted douche, which is a great comfort to patients who have not the advantages of a home or hospital appointments.

When in use the bag is suspended by the side of the bed, three feet from the floor, directly over some form of receptacle; the perforated loop of soft rubber tubing is compressed when introduced into the vagina. On opening the stopcock the upper or inflow tube is clamped for a few seconds while the outflow tube is being exhausted of air; when it is released a continuous flow of air and water takes place into the vagina; the water accumulates there to the level of the uppermost perforations in the bent tube and is then carried off into the vessel on the floor. If it is necessary to continue the douche longer than twenty minutes a pitcher of hot water is placed near at hand, so that the patient can herself replenish the douche bag without rising, when it becomes empty.

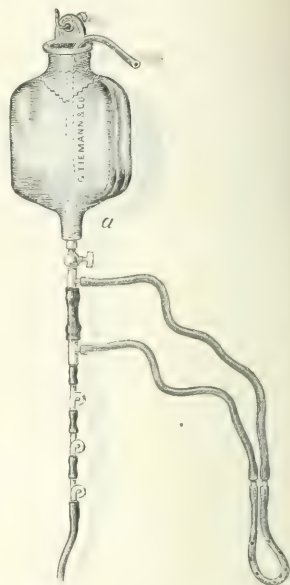
9 WEST THIRTY-FIRST STREET.

THE GRAVITY OF HYSTERIA.*

By GUSTAVUS ELIOT, A.M., M.D.,
NEW HAVEN, CONN.

Few diseases of the nervous system come under the care of the general practitioner more frequently than hysteria. Few diseases are commonly regarded as more trivial. The immortal Watson, in his lectures more than half a century ago, said: "Hysteria, though it is sufficiently distressing, is attended in nine hundred and ninety-nine cases out

* Read before the Connecticut Medical Society, at the one hundred and second annual meeting, in New Haven, May 21, 1891.



of a thousand with no ultimate peril either to mind or body."

To underestimate the importance of the disease with which a patient is suffering is always exceedingly discreditable to the physician; it is also generally very unfortunate for the patient. It will therefore be profitable to consider briefly whether hysteria has not in the past been regarded too lightly; whether there are not certain features of gravity connected with the disease which have sometimes been overlooked; and also whether the disease has not, since the time of Sir Thomas Watson, acquired new features of gravity.

The more common manifestations of hysteria are usually easily controlled and quickly disappear. The ease with which, in many cases, harsh and unexpected measures restore the patient to an apparently normal condition seems to justify the common estimate of the disease. Unfortunately, however, hysteria shares the fate of most common diseases of not being well understood—in fact, in many cases of being positively misunderstood.

The facts that practically nothing of importance is known in regard to the pathology of the disease, that its clinical manifestations are often transient, and that they often disappear rapidly under the use of remedial measures which are of little value in other affections, place it apart from other diseases, and explain why it is not strange that it has received so little serious consideration.

In public clinics, in hospitals, prisons, and almshouses, cases of extraordinary character have within comparatively recent years been carefully studied by Charcot, Weir Mitchell, Mills, and many younger neurologists. These cases have served a useful purpose in calling attention to the existence of more serious forms of the disease than had hitherto been generally recognized, although an unfortunate nomenclature has done much to develop erroneous ideas in regard to the real nature of these cases. The name hysterio-epilepsy has led many to believe that in these cases there is a genuine epileptic element which does not really exist in them. Fortunately, the more striking forms of the disease, which have been made the subject of clinical memoirs, are exceedingly rare in private practice in Connecticut.

There are, however, certain phases of the disease in its less severe forms which, while their existence is promptly recognized when they are described by some one else, are, nevertheless, not kept constantly in mind when the physician is engaged in making his daily or more infrequent visits among his neurotic patients.

When your rough and ready doctor, who prides himself on the possession of a great deal of home sense and very little scientific knowledge, meets with a case of simple hysterical convulsions in a young girl, and restores the normal state of equilibrium by doubling water in her tea, the probability is, wonder at the startling effect of so simple a remedy, and straightway conclude that the trouble did not amount to much. They are ready to exclaim, "Oh, that was nothing but hysteria," and at once furnish all sympathy for this unfortunate patient. The doctor strikes to himself and admires his own wisdom and skill.

If one were to see a patient during and immediately

after such an attack of the ordinary type, he might consider it an insignificant affair. If the patient is never seen again, of course there is no reason for thinking differently. But it must be remembered that an attack of this kind is an evidence of an instability of the nervous system; that, after such a disturbance of the stability of the nervous system has occurred once, it is likely to occur again; that repetitions of these attacks cause a gradually increasing weakness of the nervous system, which may result in prolonged or permanent attacks of chronic invalidism; and that a series of these simple hysterical convulsions may be but the forerunner of serious disturbances of the nervous system in later years. The hysterical girl may become a neurasthenic, a neuralgic, or a melancholic woman.

This is one phase of the disease which may fairly be considered as grave. Facts of this kind should be borne in mind by every physician who is called to treat hysterical patients, and measures should be employed to prevent such unfortunate occurrences.

But the individual patient is not alone to be considered. The hysterical woman frequently marries and has children. It has long been well recognized that morbid conditions and tendencies of the nervous system are transmitted from parents to children and grandchildren. The conditions of nervous instability observed in the various neuroses are with especial frequency thus transmitted. Epilepsy, neurasthenia, neuralgia, and insanity are often traced back to an hysterical ancestry. From this point of view surely hysteria must be regarded as an affection of gravity.

The foregoing suggestions have had reference to the remote results of the disease. Some of the cases which immediately exhibit a serious aspect have already been mentioned. There is another class of cases which have not been so carefully described and which are not so easily recognized, but which are deserving of especial attention from the general practitioner. These are cases which are not clear in their manifestations, which consequently are not easily distinguished from other diseases, and in which inadequate treatment may be followed by disastrous results. In many of these cases men of intelligence might differ in opinion in regard to the real nature of the affection. These cases are frequently mistaken for cases of organic disease of the nervous system. It is true that this view has not been often confirmed by pathological observations. When a case with obscure nervous symptoms begins to assume a serious aspect, the physician is apt to say that the patient has brain fever, or meningitis, or cerebro spinal meningitis. If the patient dies, the friends rarely have curiosity enough to have a post mortem examination of the central nervous system. If such examinations were made more frequently, they would probably find that in some instances there would be discovered an absence of the pathological changes which characterize these more serious forms of disease.

It also seems to be generally believed that patients do not die of hysteria. If a patient were but more regarded as suffering with hysteria, and as becoming so seriously ill that a fatal result seems probable, it is generally regarded as good evidence that the disease is something more than hysteria. This is a mistake. Sometimes a patient

does die of hysteria. The general recognition of this fact will lead to the saving of the lives of some patients who would die if they were considered and treated as being victims of organic brain disease.

Another reason why mistakes are made in treating this disease is that some very good practitioners, who are careful enough to use a thermometer in the examination of their patients, do not recognize the fact that patients with hysteria may have pyrexia, and that consequently the presence of fever does not necessarily indicate the existence of organic disease.

When the medical profession rejects these two fallacies and comes to recognize that patients with hysteria may have fever due to that disease, or that they may die as a result of that disease, its diagnosis will be considered in a more rational manner. These facts furnish an additional reason for regarding hysteria as an affection of considerable gravity.

With the more general development of intelligence and refinement, accompanied as it is with an increase in the prevalence of functional diseases of the nervous system, it is necessary for physicians to improve their methods of treating these disorders. The coarse and often brutal measures of bygone years must be superseded by other not less efficient but more elegant remedial measures. It will be found unwise to destroy entirely the sympathy of the patient's friends. It is exceedingly unfortunate for the other members of the family to get the idea that the hysterical patient is herself entirely to blame for her condition. Although, to a certain degree, this may be the fact, yet such a statement does not embrace the entire truth.

Still more unwise is it for the physician himself to betray any lack of sympathy. His manner, of course, should not be weak and vacillating, but, on the contrary, while avoiding anything bearing the appearance of unnecessary harshness, he should be kind yet firm; he should insist that his directions be minutely carried out; he should inspire hope, and by every word and action should bring encouragement to his weak and unfortunate patients.

In conclusion, it must never be forgotten that:

1. Hysterical manifestations indicate an abnormal condition of the nervous system.
2. This condition will be aggravated if the patient is not properly treated.
3. Prolonged or frequently repeated attacks may inflict serious and permanent damage upon the nervous system of the patient.
4. As a consequence, a tendency to functional disorders of the nervous system may be transmitted to the children and grandchildren of the patient.
5. Serious symptoms and even death may be caused by hysteria.

Pasteurism in Vienna.—Antirabic inoculations according to M. Pasteur's method are now, we are informed, carried out in the European Hospital in Vienna. The inoculations are postponed daily between 10 and 11 a. m. They are at present entirely free, but we gather that a scale of charges is under consideration. The inoculation is given under the direction of Professor Pfaff. (*British Medical Journal*).

NUCLEINS—A CLINICAL STUDY.

By JOHN AULDE, M. D.,

PHILADELPHIA.

INTRODUCTION.—The history of the study of nucleins extends over a period of more than sixty years, running back to the time of Braconnot (1831); but it is only within recent times that any systematic attempts have been made to determine their chemical and physiological properties with a view to their employment in the domain of practical therapeutics. The object of the present paper is to present a concise epitome of the subject, referring briefly to the more important questions likely to occur to the general practitioner relating to the source and method of preparation, physiological properties, therapeutic range, with clinical indications for their employment.

SOURCE AND PREPARATION.—*Scientifically*, nuclein is described as a phosphorized proteid, the phosphorus existing in the form of nucleic acid, combined with a highly complex basic substance. This basic substance yields as decomposition products one or more of the so-called xanthine bodies, adenin, guanin, sarkin, and xanthin. The available sources are as follows: Yeast-cells, yolk of egg, the spleen, the blood, the testicles, the bone marrow, the brain substance, and the thyroid and thymus glands.

Historically, nucleins have been studied by Braconnot (1831), Quevene (1838), Schlossberger (1834), Miescher (1845), Bechamp (1865), and later by Hoppe-Seyler, Lubavin, von Jaksch, and Plösz. In 1879 Kossel demonstrated that they possessed germicidal properties, and ten years later they received attention at the hands of Altmann. Liebermann prepared an artificial nuclein from albumin and metaphosphoric acid, and here should also be mentioned the names of Geohagan, Malfatti, Horbaczewski, and finally, in 1893, Vaughan, of America, Althaus, of England, and Germain Sée, of France.*

* The appended references to contributions by the writer may be of some interest to those who wish to investigate further the clinical researches on this subject:

- Nuclein Therapy. *American Therapist*, December, 1893.
The Principle involved in the Subcutaneous Use of Blood Serum. *Loc. cit.*, January, 1894.
Clinical Observations on Nuclein Solutions. *Loc. cit.*, February, 1894.
Thrashing over Old Straw. *Loc. cit.*, February, 1894.
A Note on the Employment of Nuclein Solution. *New York Medical Journal*, March 24, 1894.
The Treatment of Diarrheal Disease. *Transactions of the Medical Society of the State of Pennsylvania*, 1894 (*American Therapist*, May, 1894).
Organic Extracts. *American Therapist*, July, 1894.
Nuclein—What is it? *Medical Summary*, July, 1894.
A Modern Idea in Scientific Medicine. *Medical Record*, August 11, 1894.
Autumnal Catarrh. *American Therapist*, August, 1894.
Professor Vaughan has published the following papers:
The Principles of Immunity and Cure in Infectious Diseases. *American Therapist*, September, 1893 (*Transactions of the First Pan-American Congress*, Washington, D. C., 1893).
The Nature of the Germicidal Constituent of Blood Serum. *Medical News*, December 25, 1893 (read by title, First Pan American Medical Congress, Washington, D. C., 1893).
The Nucleins and Nuclein Therapy. *Journal of the American Med.*

Yeast nuclein, according to Vaughan, is prepared as follows: Brewer's yeast is extracted with dilute alkali and filtered, and the filtrate precipitated with dilute hydrochloric acid. The precipitate is redissolved in alkali and reprecipitated with acid several times, and is finally dissolved in 0.25 per cent. of potassium hydrate.

Testicular nuclein is prepared by means of artificial digestion, after a preliminary maceration and extraction with a mixture of equal volumes of absolute alcohol and ether. The testicular substance is then digested for some days with pepsin and 0.2-per-cent. hydrochloric acid, the undigested portion being collected on a filter paper and worked, first, with 0.2-per-cent. hydrochloric acid, then with alcohol. The final step consists in dissolving the precipitate in a 0.5-per-cent. solution of potassium hydrate and filtering through a Chamberlain filter without pressure.

Nuclein solutions are also prepared from the blood, the spleen, the bone marrow, the brain, and the thyroid and thymus glands in the same manner as described for the preparation of testicular nuclein; but, as all these solutions obtained in this way from animal sources contain a small percentage of albumin, this fact must be taken into consideration when using the product hypodermically. There is also danger of sloughing, owing to the presence of the alkali, when large doses are administered in this manner. Through the courtesy of a competent chemist I have been able to conduct my later experiments with solutions absolutely free from albumin or excess of alkali, which give rise to no untoward effects either hypodermically or when introduced into the system by way of the stomach. After a careful survey of the current literature, together with an extended series of clinical tests, the conclusion was reached that the thyroid and thymus glands offered the most valuable and at the same time the most available source for obtaining this product, and, with some important modifications of Vaughan's process, a permanent and non-irritant solution of definite strength could be depended upon. Investigations are still in progress, and it is probable that a slightly modified product, a trifle less effective therapeutically, will in the end be found which can be prepared at a nominal expense.

Physiological Properties.—Naturally, in studying the physiological properties of any remedy, we must consider the effect which results from its presence in the organism—*i. e.*, when brought into contact with the tissues; but it is not sufficient for the present demands of science simply to assert that a drug "stimulates," or acts as a "sedative," unless we are prepared to offer some rational and satisfactory explanation of the mode by which such stimulation or sedation is produced. In the case of nuclein, for example, it is now well known that this is the name applied to a product more or less constantly manufactured by certain leucocytes (the multinuclear white blood-corpuscles), and being distributed throughout the tissues by means of the

lymph and blood vascular systems, a normal functional activity is maintained in the protoplasm. Now, poisonous substances produce stimulation of the protoplasm through the irritation set up, and, if long continued, this irritability is exhausted, when sedation follows; but it seems that Nature's laboratory is adapted to the production of a protoplasmic stimulant, possessing all the properties of an antiseptic which is non-irritant, and when, through faulty metabolism, leucocytosis is defective, nuclein can be artificially supplied.

It will not be out of place here to consider the methods of Nature in resisting the inroads or progress of disease, or the aim of physiological medication in the attempt to produce artificial immunity. Taking diphtheria as an illustration, the question may be asked, Why does not the disease persist so long as life continues? The answer to this will be, that the conservative processes of the human economy are sufficient, along with suitable medication, to arrest its progress; but this explanation, from a scientific standpoint, is utterly worthless, although it has done duty and has been repeated indefinitely for generations. How shall we explain the effects of physiological antagonism by inoculation with solutions prepared from pure cultures of the pathogenic micro-organism? In this category would also fall the method of preventing cholera, pneumonia, hydrophobia, tetanus, and the arrest and cure of certain forms of cancerous affections by means of pure cultures of the bacteria associated with the respective disorders. The following outline would seem to be a more appropriate and withal a scientific elucidation of this most perplexing problem: The vitality of the animal organism depends upon the integrity and normal functional activity of the cells. Derangement of the various organs is always the result of functional or organic perturbation of the cell life or cell activity, and upon this well-known fact rests the modern doctrine of cellular therapy. All, or nearly all, remedial agents are exhibited with a view to modify, to increase, or diminish cellular activity, so that cellular therapy is but a new name used to designate a method which has universally prevailed since the dawn of medical history. The scientific search-light has but revealed its existence, while the bacterial torch enables us to fix its position.

Now, these cells, which make up the different organs and structures, are themselves composed of cells—protoplasmic cells—and it is necessary, therefore, in order to modify their functional activity, that the protoplasm should be influenced, this being effected through the medium of the blood and intercellular fluids. Thus the protoplasm is constantly bathed in fluids containing nutritive pabulum (and oxygen), which is taken up, and it gives off in return carbonic acid and other waste products. The protoplasm likewise possesses the power to construct organic compounds, which become a powerful stimulus and stimulant.

Contrasting this line of inquiry, we find that the power to resist or withstand disease is now attributed to "cellular life proteins." And recent investigations clearly point to nuclein as one of the most effective agents which can be applied and are contained in this system of physiological therapy. Physiological investigation shows that nuclein possesses

Dr. A. A. Aulde, M.D., is Lecturer in Chemistry, New York College of Pharmacy, New York.

Professor Vaughan has also published a paper, "On the Preparation of Nuclein," in the *Transactions of the American Chemical Society*, Vol. 16, No. 2, 1894.

distinct antiseptic properties, and clinical observation has repeatedly demonstrated its therapeutic virtues in a long list of hitherto vexatious and intractable diseases. These results, according to my interpretation of physiological processes, are due to the influence of nuclein upon the protoplasmic cells; hence the term cellular therapy, nuclein therapy being an important subdivision.

During the progress of disease, more especially disease characterized by active inflammation, when nutrition is fairly maintained, the polynuclear white blood-corpuscles rapidly increase in number (inflammatory leucocytosis), and it is believed that at this stage they manufacture or produce nuclein in much larger quantity than under normal requirements. The nuclein in solution is thus brought into direct contact with the protoplasmic cells, and as a consequence their ability to resist disease, or rather, we should say, bacteria and their products, is measurably increased, not to mention the influence which is exerted directly by the presence in the blood and intercellular fluids of such a powerful antiseptic.

We have here, then, a lucid and at the same time rational explanation of the *vis medicatrix nature*, as demonstrated by physiological experimentation and confirmed by clinical observation. Health is maintained and resistance to disease effected mainly through the influence of nuclein as the most active of the so-called "defensive proteids."

It is now a well-recognized fact in physiology that in confirmed drunkards the effect of alcohol on the protoplasmic cells can be demonstrated—alcoholized protoplasm—and experiments now under way give promise that we shall be able shortly to estimate in like manner the effect of long-continued opium addiction—morphinized protoplasm—all going to show that the protoplasm may be subjected to what might be termed an educational process. Such a process, we are warranted in assuming, takes place during the progress of disease, the protoplasmic cells in time becoming immune against infection.

The foregoing appears to cover the main points involved when replying to the question relating to the persistence of disease, while it affords a scientific explanation of the conservative processes of Nature, although there are still remaining many important details which can be filled in by the intelligent and thoughtful physician.

THE THERAPEUTIC RANGE.—The therapeutic range of nuclein will manifestly be determined by studying its proper physiological rôle in the economy, bearing in mind that it permeates the blood and opens the blood upon the nervous system. Wherever Nature provides for the elimination of poisons or waste products of any description, these shall be facilitated. Were it not for the antiseptic properties of nuclein, as it is poured into the stomach and intestine in combination with the normal secretions, what would be the condition of the alimentary tract at the end of twenty-four hours? Had not a wise provision been made for the protection of the mucous membrane of the pulmonary structure and upper air passages, how long would it be until decomposition would supplant normal elimination? And the same train of thought applies with equal force to the skin, the kidneys, and the entire glandu-

lar system. The condition of affairs may be compared with an island, or even a large country, traversed by a complete system of railroads and provided with telegraph lines—diverging, intersecting, connecting—with public and private roads extending in every direction, all under one central management. In the case of war, famine, or pestilence, which may be likened to disease, the whole commercial mechanism of the country is manipulated with the sole object of relieving the local distress, and, like the little blood-corpuscles in disease, every inhabitant exerts his individual effort to the best of his ability in the hope of being able to contribute something toward restoring normal conditions.

We have in the recent strikes a modern instance of physiological concentration in the arrest of disease, as contrasted with the ancient *régime* which advocated counter-irritation. Had the authorities at the time of the Chicago riots undertaken to quell the disturbance by a show of fighting a thousand miles away, anarchy might still be present with us; but by distributing soldiers and concentrating a police force at the points of rebellion, the vicious element was subdued and order re-established. Just so it is in disease; Nature contrives to afford protection by means of the defensive proteids. We have an appropriate illustration of this in the case of boils, carbuncles, and abscesses. The same holds good also in the case of intestinal troubles—diarrhœa, dysentery, peritonitis, and typhoid fever; and the principle extends to pulmonary and bronchial affections, shown by the increased secretion, where Nature attempts to correct defects by additional work.

Taking a comprehensive survey of the subject in hand, we should assume that the exhibition of nuclein would be useful, first, in the treatment of all forms of anæmia, where nutrition is below par and digestion so impaired that insufficient pabulum is supplied to the white blood-corpuscles. By enriching the blood through the artificial supply of nuclein, the normal functions of elimination are improved and leucocytosis restored. Malaria, especially of the chronic or recurrent type, is promptly and favorably modified by the exhibition of nuclein. In both diseases the effect of medication can be demonstrated from time to time by an examination of the blood. In digestive disorders, whether occurring alone, associated with or dependent upon other disease, whether affecting the stomach or intestinal tract, nuclein solutions are most efficacious. Pulmonary disease, tuberculosis, pleurisy, pneumonia, and pleuro-pneumonia and bronchial affections generally respond promptly to nuclein medication; but a caution should be added to the effect that too much must not be expected of nucleins, presently to be more fully elaborated. In diseases of the skin arising from imperfect elimination or suboxidation, the administration of nuclein is attended with the most gratifying results; and it is even serviceable in correcting cutaneous lesions due to specific infection, doubtless owing to the improved character of the insensible transpiration. Derangements of the renal functions are perceptibly improved by nuclein. In a marked case of albuminuria, the urine was increased, the percentage of albumin lessened, œdema of the extremities and abdominal distention diminished, and

there occurred a decided improvement in the digestive function. The effect of nuclein upon the kidneys during the progress of disease elsewhere is not especially marked, the urinary flow being slightly increased, but the general character of the water is distinctly improved.

From the preceding remarks, the effect of nuclein upon the nervous system will be inferred. When disordered innervation results from faulty assimilation or defective elimination, its beneficial influence becomes quickly apparent, but its virtues are particularly noticeable when the history of the disease enables us to designate some local ailment or derangement as the exciting cause for the persistence of the malady. Thus, in females, menstrual irregularities may be responsible for a mild form of melancholia, which promptly subsides upon re-establishment of a more active tissue metabolism. In men, immoderate coffee-drinking not infrequently paves the way for subsequent cerebral disturbances. Upon removal of the cause the hepatic functions regain their vitality, and with the addition of nuclein elimination at distant points is favored.

The stimulant effect upon the cerebral functions can easily be demonstrated; taken at a time when the vital powers are depressed and the physical system exhausted from overwork, a few doses, often a single dose, creates a feeling of mental buoyancy; the step becomes firm and elastic and ambition supplants languor. This property has frequently attracted attention in the aged and in those suffering from chronic maladies.

The foregoing recapitulation embraces substantially the groundwork of nuclein therapy from the standpoint of the clinician; but in order to give the present article a practical turn it will be advisable to enter somewhat into detail respecting several of the more prevalent maladies common to this latitude.

CLINICAL OBSERVATIONS.—Anemia.—Anemia is essentially a wasting disease, the nutrition of the blood being impaired by the presence of waste products and other poisonous elements remaining in the system. Persons thus affected suffer from headache, neuralgia, various forms of catarrh, fugitive rheumatic pains, lack of appetite, sleeplessness, and constipation. The facial expression is indicative of weariness, the gait is slow and unsteady instead of being elastic and firm, while mental hebetude is often most pronounced. This condition is liable to appear in both young and old in every station of life, but it is more particularly noticeable in young girls and those who have had malarial or some lingering disease. It is frequently marked as the sequel of acute diseases, convalescence being tardy owing to faulty assimilation.

An examination of the blood shows that the red corpuscles are in an unhealthy condition, and, as a consequence, are unable to carry oxygen to the tissues; hence, combustion is lessened, the vitality of the system reduced, and the patient becomes susceptible to other diseases—pleurisy, pneumonia, pleuro-pneumonia, bronchitis, and rheumatism in winter, and the usual bowel troubles, typhoid fever, adenoids and chronic catarrh in summer and autumn. To remove these irritants and restore the function of the little red blood globules, of which there are

about two hundred trillions in the human body, is a work of no small magnitude, and heretofore has required much time, patience, and skill on the part of the physician; but with the exhibition of nuclein, suitable diet, and proper hygiene, a favorable impression is produced at once, and the patient gains perceptibly from day to day. Nuclein, however, is not strictly curative without these adjuncts, but it paves the way, setting the patient on his feet as it were, and does not preclude the use of other approved medicaments. An examination of the blood under the microscope discovers the true condition, and enables the physician to determine progress from time to time.

Malarial Disease.—This disease is better understood than in former years, since it has now been repeatedly demonstrated that a vegetable micro-organism is present in the blood. Under the microscope the influence of this parasite upon the red blood-corpuscles can be studied, and with its disappearance the disease subsides. The presence of nuclein in the blood and intercellular fluids appears to have a demoralizing effect upon the micro-organism and stimulates the blood and tissues to discharge an unwelcome guest, a few days only being required to produce a favorable change in the condition of the patient. The suggestion is thrown out here that possibly this effect is due more to the stimulation of the leucocytes (leucocytosis) than to the direct action of the substance upon either the blood or the parasite; but at any rate the transformation is effected without the least disagreeable symptom or untoward effect such as characterizes the treatment by quinine. Chronic cases, and those which show a disposition to return spring and autumn (recurrent malarial disease), are readily controlled by nuclein, improvement being observed within a few days; the languid feeling disappears, appetite returns, the bowels become regular, pain over the liver and in the back vanishes, the muddy, sallow, and greasy appearance of the skin clears up, and physical and mental activity no longer seem burdensome. Rarely will it be necessary to exhibit other medicines for the relief of this troublesome affection, except for the purpose of supplying the system with certain elementary substances that it has failed to secure because of long-continued malassimilation.

Bronchial Affections.—In the case of bronchial affections, subacute and chronic, nuclein shows its sterling value as a remedial agent. The health of most persons thus affected is a trifle below par, and as a consequence the mucous membrane lining the tubes is called upon to perform vicariously the function of elimination. Hitherto, treatment has consisted in the exhibition of remedies calculated to increase secretion, while the wise physician should aim to lessen secretion, endeavoring at the same time to increase the activity of elimination at other points, thus reducing the output through the bronchial tubes, and this purpose nuclein most satisfactorily accomplishes. It regularly and persistently renews the functional activity of the skin, the kidneys, the liver, and produces a favorable action upon the bowels, probably through increased cellular activity, both systemic and locally at the points of elimination. As a result, enough secretions are excreted, the appetite improves, and the patient gains strength, be-

cause, through this increased cellular activity, the normal functions are restored by a process which is in harmony with Nature's methods and in conformity with her laws.

Humid asthma and nearly all forms of *autumnal catarrh* are amenable to treatment by nuclein solutions; but in many of these cases, owing to the debilitated condition of the muscular system, it will be advisable to combine with its administration the use of strychnine in some form, preferably small doses of the arsenite.

Influenza.—My experience with nuclein solutions in combating influenzal complications during the past two winters has been remarkably favorable—so much so that in mild cases no other remedy has been employed, except for the control of special symptoms, such as accelerated pulse, headache, and other neuralgic pains. In convalescence from this disease, with the addition of small doses of strychnine arsenite (one one-hundredth of a grain every two hours), recovery is remarkably prompt and apparently complete; cough and expectoration subside, strength is regained, appetite restored, and the patient is up and about within a few days after the acute stage has passed. There is no pronounced weakness, no lingering debility, and no demand for continued medication.

Pulmonary Diseases.—In the treatment of pneumonia, pleuro-pneumonia, pleurisy, and tuberculosis, the beneficial action of this remedy is sufficiently marked to be worthy of mention, although it is not advocated as a curative agent. In pneumonia, for example, when the circulation is under control, in the absence of hyperthermia, when elimination by the natural channels is arrested—shown by the embarrassed respiration and cardiac debility—solutions of nuclein can be depended upon to rekindle the dying flame by contributing toward the restoration of the normal condition of the blood. Still, there must be some doubt as to whether nuclein actually supplies something that is wanting in these cases; rather it stimulates leucocytosis, thus augmenting the antiseptic properties of this fluid. The same is true of its action in the treatment of pleurisy.

In tuberculosis it lessens the cough by diminishing expectoration, improves the appetite, regulates the bowels, increases elimination by the skin and kidneys, decreases the frequency of the exacerbations due to extension of the disease, controls the *nocturnal sweats*, and creates a feeling of well-being, while it does not interfere with the administration of other medicaments hitherto so highly prized for their antiseptic properties.

Disorders of Digestion.—In all functional disorders of the digestive system, diet being regulated, the effects are apparent within a few days. It also possesses a high degree of utility in acute attacks, more especially after the initial stage. Nuclein is almost a specific in the treatment of *dyspepsia* (*gastritis*), *biliousness* and *perniciousness*, arising from digestive disturbances superinduced by cold and capitis. Indeed, in every variety of these troubles the virtues are manifested within a few hours, although relief is less marked in those cases associated with a rheumatic diathesis.

Intoxication being defective in typhoid fever, the advantages of nuclein in this disease will at once suggest

themselves, and as an adjuvant to modern antiseptic methods—for its influence upon nutrition—it will eventually occupy a position of no mean significance.

Diphtheria.—In quite a large number of cases where all the symptoms pointed to diphtheria as the true condition I have found nuclein solutions most efficacious, the false membrane, angina, anorexia, and restlessness all disappearing in less than twenty-four hours; and, although some fever remains for a day or two, if seen early in the attack, the most forbidding symptoms promptly yield to this form of medication. Being absolutely tasteless, prompt in its action, and entirely free from objectionable after-effects, children take it readily, frequently asking the nurse if it is "time for the medicine."

ADMINISTRATION.—The administration of nuclein solutions differs in no wise from that of other remedies. The usual dose for an adult is, approximately, one third of a minim of the standard solution adopted, and for convenience and economy it is put in the form of tablets or granules. This dose can be repeated at intervals of from two to four hours; but in acute cases, where the patient is seen late in the day, the dose may be repeated at intervals of an hour for that day. For a child five years of age the dose should be about one third of this quantity, which can be regulated by solution in water.

In the treatment of throat troubles some advantage appears to be gained by allowing the tablet or granule to dissolve in the mouth. Tablets have been prepared for me by Mr. Charles Leedom, a local druggist of this city.

Hypodermically, notably in the case of malaria and anæmia, I have administered much larger doses, usually beginning with five drops and increasing the dose at each visit on alternate days until eight, ten, or twelve drops were given in this manner. In one case of long-continued malaria I exhibited the equivalent of a drachm, not only without untoward effect, but with decided benefit.

There are practically no contraindications, except perhaps perfect health, since, so far as my observations extend, this solution is non-toxic. The only perceptible symptoms which might be regarded as at all unfavorable, and these are inconstant, are slight passive congestion of the pharyngeal structures occasionally, increased flow of urine, and generally the development of sulphureted-hydrogen gas in the intestine; but these defects may be avoided by decreasing the dose.

LEE WALSH STREET.

Vaccination in Austria.—According to an official report recently published, the number of vaccinations in Austria is increasing steadily, though not in proportion to the growth of the population. In 1891 the ratio was 1 vaccination to 31 inhabitants; in 1892, it was 1 in 29; in 1893, 1 in 32 for the whole of Austria. Taking separate divisions of the country, we find that in 1893 the proportion of vaccinations to population in Lower Austria was 1 in 41; in Upper Austria 1 in 45; in Vorarlberg, 1 in 37. The annual lymph was almost without exception procured from the Imperial Royal Vaccine Institute at the expense of the State. In 1891 the proportion of successful vaccinations was 87.7 per cent.; in 1892, 89.1; and in 1893, 90.3.—*British Medical Journal*.

ARSENITE OF COPPER.

By ALIX HRDLICKA, M.D.

It is now over two years that I have been using arsenite of copper in the various inflammations of the mucous membranes, and the almost universal good results obtained from its applications authorize a report.

I dislike to appear as an enthusiast, and I therefore will submit nothing but simple reports of the different cases wherein it was used. Nor will I enter into tedious clinical description, my object being not to formulate rules or demonstrate uncommon successes, but simply to call attention to facts that may be verified and further elucidated.

I have used arsenite of copper in inflammatory derangements of nearly all the mucous membranes of the body, from that of the gastro-intestinal tract to those of the eye, ear, nose, mouth, and pharynx on the one hand, and the urethra, bladder, vagina, and rectum on the other; the results prove to me that it will control alone or accompanied by other remedies and means, when administered in time and in the proper way, most of the acute and non-specific uncomplicated inflammations of these structures. With regard to the time of its administration during the course of the disease, the earlier it is given the better and more rapidly it acts; the manner of its administration is purely topical, and I have found that it served me best in solutions of from 1 to 50 or 100,000. These solutions are easily made by dissolving one of the common 100-grain pellets in respectively one or two ounces of water, and are applied frequently at intervals seldom longer than an hour (bladder, urethra, and nose), and often not longer than from ten to fifteen minutes.

The general characters of the cases which indicate its use are those of acute and subacute inflammations attended with pain, effusion, and a more or less watery discharge. It has little action in cases where the discharge is thick and persistent, unless the affected surface is thoroughly cleansed by irrigation or lavage before the solution is applied.

My practice is a general one, and I have not been able to collect in most instances sufficient material in these special branches. I hope most sincerely that this remedy will be given an extended trial, as it seems to deserve it. The following are the cases in which I used it:

1. Two cases of catarrh, one acute and the other subacute. Subul and Rhinos were indicated to be at first, but were found insufficient and arsenite of copper was resorted to. In the first case, one of acute catarrh in a woman, from the irritation of a catheter after delivery, accompanied by watery discharge. When large of the bladder with a 1 to 50,000 solution was prescribed twice a day and 1 ounce water was prescribed. It was used three months since this treatment was completed, and up to the present time there has been no trouble with the bladder. The second case was one of chronic catarrh, also in a woman, which lasted for over three months. During the first month of the treatment, daily and five or six times a day, and then once a day and at night, but no material improvement followed. After attention to the diet and general care, moderate results. At the beginning of the second month, an arsenite of copper lotion was instituted and everything else withdrawn. Every second day the bladder was filled at first, and then washed with a

warm 1-to-50,000 solution (90° F.), of which about three quarters were used at once. At first the bladder would not hold more than three or four ounces, but a rapid improvement followed each lavage, and at the end of the second month the patient was discharged. The bladder capacity was then twenty-five ounces, there were no signs of disease, and the cure was permanent.

2. In three cases of gonorrhœa and in one of proctitis, I have met with more or less complete success in the employment of this treatment.

3. In six cases of otitis externa diffusa arsenite of copper was used alone, and in two cases a little morphine was added, but it was found unnecessary, as the simple solution relieved the pain just as promptly. A 1-to-50,000 solution was used, and recovery set in in from one to three days in all the cases.

4. Five cases of rhinitis, one chronic and one subacute. The case of chronic rhinitis deserves special mention. It was a case of ulcerative anterior rhinitis of three years' standing, and the patient had never received more than temporary benefit from any treatment until the application of the arsenite of copper. She had had no other treatment now for sixteen months and is apparently cured. A warm solution of 1 to 100,000 was injected into the nostrils from two to four times a day, as the conditions required. The trouble receded from the first, and only twice has exacerbation occurred; the bleeding and odor disappeared entirely in three weeks, and the ulceration healed in as many months, so that the patient was practically cured in four months, and the further treatment, consisting of one application daily of the solution, was prescribed on account of the predisposition to a recurrence of the disease that threatened several times through neglect. In the meantime, the nose, which had been very much disfigured, regained its natural size and shape. The only internal remedy used was iodide of iron, which, however, had to be discontinued. Of the other cases three were very much benefited, but in the fourth, a peculiar case of periodical rhinitis, the remedy had no apparent effect.

5. In various inflammations of the mouth and pharynx, in twenty-one cases where I used the arsenite of copper solution, I found it a most valuable adjuvant to other remedies without an exception, and, although I have not used it exclusively, I have no doubt that it would have sufficed alone in many cases. It yielded good results in a case of superficial esophagitis due to swallowing hot bouillon. The aching and burning disappeared rapidly, and the next day the patient could swallow without experiencing pain. It may be said that the effects of arsenite of copper are, as a rule, in cases where it proves efficacious, immediate, and unless a very rapid improvement is noticed it would be useless to continue the remedy.

6. In various intestinal affections I have used this remedy very extensively—over a hundred cases—and, although not uniformly successful, I would recommend it most strongly in suitable cases. If used before the attack of the intestinal symptoms, as in chronic or subacute gastritis or enteritis. It is clearly indicated in acute inflammation of the tract attended with profuse watery secretion, pain, and much excitement, as in acute gastritis and dysentery. A type of disease most closely resembling the remedy is the acute dysentery, that of the type and of chronic inflammation.

7. In most of the preceding cases, however, success had been in the past, but I have not had success, and in some cases the symptoms have been aggravated, as in the chronic enteritis and colitis, and in some cases. I have treated fifty-three patients with arsenite of copper, up to the present time with good results. Among these cases twenty-one have been treated with arsenite of copper, and the rest were treated with other remedies. Pathologically, these inflammations proceed from a more or less

dening of the conjunctive to the severest forms of effusion. These cases were associated with phlyctenulae, three combined with keratitis, and one with keratitis and iritis. Twice I have myself suffered from traumatism, and once through transmission by my friend Dr. Z. M.

The duration of the treatment ranged from a few hours to two or three days in mild cases, and from several days to three months in complicated cases, as in the last one mentioned. At no time have I seen a failure, and in all of the cases relief has been nearly instantaneous. The solution used was always that of a hundredth of a grain of the drug (a tablet triturate) to two ounces of boiled or distilled water, applied by means of a dropper every ten or fifteen minutes until relief was obtained; after that every hour. No other remedies are needed. I never seek or trust specifics, for experience has taught me to rely exclusively, in conjunctivitis, on arsenite of copper. The action of the remedy has never been actually defined, and it is uncertain. It is not due to its antiseptic power, for this is very feeble. A one-to-fifty-thousand solution does not perceptibly retard the coagulation of milk or the putrefaction of bouillon and urine. Deducing from my observations, it appears to act in a triple manner:

1. As a cleansing agent.
2. As a soothing agent to the excited vaso-motor nerves.
3. As a cellular stimulant and tonic.

Aulde, in the *Medical Mirror*, St. Louis, December, 1890, praises its value in indigestion.

J. L. Postcome, in the *Edinburgh Medical Journal*, December, 1890, reports success in diarrhoea, cholera infantum, and in dysentery.

W. H. Burtley, in the *Therapeutic Gazette*, January, 1891, recommends it in chronic diarrhoea.

P. Landrum, in the *Medical Summary*, November, 1891, recommends it in diarrhoea.

A. Korndoerfer, in the *Medical and Surgical Reporter*, Philadelphia, July 25, 1891, recommends it in diarrhoea.

B. K. Kathford, in the *Journal of the Medical College of Ohio*, 1891, recommends it in typhoid fever, summer complaint, intestinal catarrh, and tubercular diarrhoea.

W. J. Burd, in the *New York Medical Journal*, November 7, 1891, recommends it in acute diarrhoeal diseases.

C. G. Kerley, in the *New York Medical Journal*, November 7, 1891, condemns it as useless.

E. B. Doolittle, in the *New York Medical Journal*, November 7, 1891, expresses an adverse opinion concerning the curative properties of the drug.

W. Blair Stewart, in the *New York Medical Journal*, October 24, 1891, confirms its good effects in diarrhoea, and says that it is valuable as an antispasmodic, as an astringent, and, probably, as an antiseptic.

H. B. Rice, in the *New York Medical Journal*, October 24, 1891, believes it to be a strong germicide, with best results in acute cases of dysentery.

J. R. Overholser, in the *New York Medical Journal*, October 24, 1891, recommends it in the night sweats of phthisis.

W. J. Overholser, in the *New York Medical Journal*, October 24, 1891, recommends it in intestinal troubles.

The history of this remedy is as follows: It has been used for the disease of the greatest feculent mucous membrane. We must refer the first reference to its employment in diarrhoea to the year of 1793, the second to 1810, the third to 1819, and the fourth to 1820. It was first used by the Pharmacopoeia Medica, London, in 1820, and was the first in the *Medical Dictionary*, London, in 1820. It is now recommended in all of the books for intestinal troubles. Attention was afterwards directed to it by Dr. John A. Smith of Philadelphia, who recom-

mended it in colic and in diarrhoeal intestinal affections, also in typhoid fever, in the *Medical Register* of September 8, 1888; the *Therapeutic Gazette* of July and November, 1889; the *Medical News*, November 9, 1889; the *Medical Summary*, July, 1890; and the *Medical and Surgical Reporter*, August 22, 1890.

Aulde was soon followed by others, and up to the beginning of the year 1893 the literature on this subject is as follows:

L. Worsham, in the *Therapeutic Gazette*, January, 1890, confirms Aulde.

J. T. Esher and M. F. Dumas, in the *Medical Summary*, July, 1890, confirm Aulde; also, O. H. Lake, in the *College and Clinical Record*, Philadelphia, September, 1890.

307 EAST SEVENTY-SECOND STREET.

A CASE OF CARCINOMA OF THE ANTRUM OF HIGHMORE. NASAL POLYPI.

By JOHN DUNN, M. D.,
RICHMOND, VA.

Mrs. P., aged fifty-three years. First seen June 8, 1893. Examination of nose and cheek reveals the following condition of affairs: Double proliferating ethmoiditis, affecting chiefly the region of the anterior ethmoidal cells and the middle turbinates. Occlusion of upper air-passages anteriorly, on both sides, by polyp and hypertrophied middle turbinates. In the left nose there is a marked deflection of the septum. No marked posterior hypertrophies. Inner wall of the antrum of left side apparently bulging toward the nasal cavities. Usual amount of pus and mucous secretion. Left cheek swollen. On palpation through skin of cheek, a tumor apparently attached to the cheek bone just above the gums can be felt. Tumor is elastic and feels as though it contained fluid. Examined from the mouth, a bulging can be seen of the cheek wall, extending from about the line of the first bicuspid upward and backward. Mucous membrane over the swelling not inflamed. Tumor is about the size of a pigeon's egg and is attached firmly to the cheek wall just above the gums. Not painful on manipulation. Can not be reduced in size by pressure. A bistoury forced into this mass close to cheek wall meets with little resistance and can be forced upward until it reaches the orbital plate of the superior maxilla, showing that the outer wall of the maxillary bone has been destroyed. A bent probe passed into the wound passes directly into the antrum, which apparently contains a growth of little density. Bleeding slight. No pus or mucus. The question now arose as to the nature of this tumor. Previous history as follows: Nasal trouble for an indefinite number of years. Polypi have more than once during the past year been removed from the nose. For the past month or six weeks patient has suffered from entire occlusion of left nose whenever she has lain down. Lately this occlusion has become painful, and she has been obliged to sleep in an upright position. For a week or more sleep has been well-nigh impossible because of a sense of fullness of right side of face. Patient bears suffering well. No acute pain in neighborhood of growth, but rather a painful sense of continued pressure.

Have we here to deal with a simple sarcoma or with one of its varieties, or with carcinoma, or has this condition resulted from pressure due to the continued presence of a growing polypus in the antrum? The tumor outside of the cheek was carefully probed for pus with bistoury, blunt probe, and hypodermic syringe, and on three occasions. No sign of pus, how-

ever, could be obtained. In passing the bistoury into the tumor particles of bone could be felt.

June 12th.—Polypi have been removed from the nose as far as practicable. The sense of discomfort in the cheek has been so great that the patient can not sleep. Decided to operate. Intention to remove the front and side walls of the antrum and, if necessary, the superior maxilla. Incision made from below the inner angle of the eye, down the cheek at the side of the nose, through the lip. Cheek held out of the way. Bistoury passed to the edge of the tumor and forced into the antrum. Opened into what appeared to be an intra-antral abscess, and cut through considerable loose bone. With a saw the front wall of the antrum as far forward as the nasal process of the superior maxilla was removed. Tumor found to have spread beyond antrum into the tissues of the cheek. Decided that resection of the superior maxilla would be useless. Passing the finger into the antrum, it was found to be filled with a loose, whitish mass, resembling somewhat in appearance the common mucous polypus. Much of this could be removed with the finger nail. The bony walls of the antrum had a mushy, velvety feel. Antrum curetted and packed with iodoform gauze. Bleeding was excessive. The growth in the cheek spread with such rapidity that before the skin wound healed it was already infiltrated with tumor cells.

A portion of the tumor was sent to Dr. Ward A. Halden, of New York, for examination. The growth proved to be a carcinoma.

The further history of the case need not be gone into. The tumor increased rapidly in size. After a few weeks the glands of the neck became involved, and when the patient died, June 24, 1894, the growth extended from above the zygomatic ridge on the left side down the face and neck to the shoulder. It had in several places produced huge nodules, some of which were ulcerated on their surface and covered with a thick, hard, adherent scab. The patient's strength gradually grew less, and she finally died of exhaustion.

The sequence of events in this case seems to have been as follows: An inherited lack of resistance to the development of new growths in certain parts of the upper air tract; the existence and position of the new growth to be determined by the part of the upper mucous tract to which the conditions necessary to the development of the new growth should be applied; the character of the new growth to be dependent upon several things—viz., nature of the conditions applied, such as their duration, chemical or parasitical nature; the state of the general health as affected directly by the local trouble or indirectly by intercurrent diseases. The presence of the septal deviation may be looked upon as the prime external cause of the localization of the carcinoma in the antrum. The deviation was sufficient to cause partial occlusion of the left nostril; necessarily some turbinate hypertrophy resulted, and with this more or less chronic congestion of the nasal mucous membrane. From time to time the patient suffered from inflammation in the head, with increased nasal secretion, which, owing to the fact that it was constantly forming and that there was more or less difficulty in clearing the nose, owing to the presence of the deviation, was allowed to collect in greater or less quantities in the nasal passages, where, in an intermediate and varying extent it underwent certain changes of decomposition. These conditions, working for years in the presence of an inherited lack of resistance,

produced, finally, changes in the ethmoid cells, bringing on proliferating ethmoiditis with the production of polypi, etc. This last condition was neglected until the entrance to the antrum of Highmore became occluded, either through pressure from the ethmoidal polypi or the development of a polypus in the entrance itself. As a result of this, the antrum being closed, a purulent inflammation of this cavity took place. Nor is it at all unlikely that a polypus grew into the antrum, springing from the unciform process of the ethmoid. (I have seen one case where this point of origin seemed most likely.)

This condition in turn was indefinitely neglected, or virtually so, since no treatment other than the removal of the larger nasal polypi was received. And it is in the continuance of this inflammatory condition of the antral cavity that is in all likelihood to be properly sought the localization of the carcinoma in the antrum as its point of origin, and not elsewhere in the upper mucous tract. The growth at the time of the operation had invaded apparently all the walls of the antrum. Why it should have chosen the lower part of the outer wall as its first point of escape from the antrum I do not know. It may be suggested that this is the deepest part of the antral cavity, and it is here the purulent matter accumulated in greatest quantities and was subject to the fewest changes from position of the head, etc., and hence the growth may have been oldest in this position.

The further question here arises, Could there have been originally a mucous polypus of the antrum which degenerated into a carcinoma? Fink reports a case (*Archiv für Laryngologie*, Band ii, Heft 1) where obstruction of the nose had existed since youth. In the patient's twelfth year polypi were diagnosed. At the age of thirty a protrusion of the upper maxillary region was observed, the nose being full of polypi. Many polypi were removed within the next three years. At the age of thirty-three the antrum of Highmore was opened under the diagnosis of empyema of the antrum. This failed to relieve matters and the upper jaw was resected. Examination showed a carcinoma. Death followed from cachexia. The reporter thinks this case shows beyond doubt that benign fibro-myxomata can be transformed into carcinomata. The case, however, does not prove this, and the question still remains unanswered as to whether, in the cases where carcinoma appears in an antrum which for years has been the seat of a purulent process, and in all likelihood the home of one or many fibro-myxomatous polypi, the carcinomatous growth takes its origin in the walls of the antrum as the result of the presence for years of the changes produced by the constant presence of pus and its products, or whether polypi in a closed cavity undergo a transformation into carcinoma. The condition of the mucous membrane lining the antrum seemed rather to favor the former of these suppositions. Its thickened, velvety feel, at all events, suggests that it might be the starting point of the degeneration. The two cases mentioned in this article show, however, that there is a serious risk to nasal polypi, and that they are at times followed by it if they do not degenerate into carcinoma, and that the case that stands in a nasal cavity is a dreadfully disease.

ELECTRICITY IN HÆMORRHAGE INTO THE EYEBALL.*

By F. W. FRANKHAUSER, M.D.,

VISITING PHYSICIAN AND PATHOLOGIST TO READING HOSPITAL, READING, PA.

The progress in the use of electricity in therapeutics has been marvelous in the last few years. Some of the uses and effects of electricity are clearly established. There are still many opportunities open for investigation and observation.

The use of electricity in the treatment of eye diseases, especially in the treatment of opacities in the vitreous, presents a large field for investigation.

The electrical current has been employed with much success in clearing up opacities of the vitreous, and theoretical considerations as well as experience sanction its employment.†

Girard Lenlow states as a result of his investigation in this matter that the electrical current is the most effectual and also the most rapid remedy in the treatment of opacities of the vitreous. Opacities in the vitreous may be caused by diseases of the chorioid or retina, but very often they are caused by external injury, giving rise to a hæmorrhage into the anterior or posterior chambers or into both, the blood entering from without.

In quantity the hæmorrhage may be only small, not interfering very much with the vision. It may be profuse enough to fill both chambers with blood, and with the ophthalmoscope you may find only a few small flocculi or striæ, or you may find only a dark surface, not even be able to detect any reddened appearance.

This condition is generally found when the hæmorrhage occurs from without, by punctured wounds either through the cornea or through the sclerotic coat of the eyeball. Between those extremes all kinds may be present.

Prognosis.—As to results of hæmorrhage into the eyeball when it occurs from diseases of the retina or chorioid, it is governed by those diseases, or when into the anterior chamber from wounds through the cornea, the prognosis is in a measure favorable, as Leber has reported a few cases of recovery.‡

Liebreich[§] has reported a case in a woman of forty-five years of age, who after suppression of her menses had a hæmorrhage into the eye completely shutting out the light, which in the course of time was completely absorbed and her vision fully restored. Hæmorrhages into the vitreous from the chorioid or retina are often absorbed, and the vision restored in part or completely.

But where the hæmorrhage into the vitreous is caused from external violence or from wounds in the sclerotic, the prognosis is very unfavorable. If in the anterior chamber it falls to the bottom and is absorbed.

Treatment.—Iodide of potassium, mercury, iodine, cupping, blisters. If due to diseased conditions

of the background of the eye, if possible restore that. Galvanism so far, I think, gives the best results. As to the direction of the current, as to which pole should be placed over the affected eye, as to the quantity and length of time of a séance, the frequency of application, there is still some doubt. Some have used the positive, others the negative, some both; some from three to ten cells; others are now using a milliamperemeter, and thus are able to tell the strength they are using. Some have used faradism with some improvement. Some writers say in hæmorrhagic retinitis the galvanic current may be employed with the reasonable expectations of clearing up the hæmorrhage and of preventing its recurrence. There are a few cases on record where the hæmorrhage has been absorbed and the vision nearly or quite restored. There are also many cases where the internal as well as local treatment has not benefited the patient, with no absorption of the clot, and the vision lost.

Galvanism has, I think, given the best and promises more results than any other plan of treatment. Whether the constant current acts by the chemical decomposition of the blood in the chamber, or as a stimulant to whatever absorbents may be present, is as yet unsettled.

My plan of using the constant current has been to apply the glass eye bath filled with warm water over the affected eye, so the patient could wink and thus get the water under the lids to the conjunctiva, to which was attached the negative pole of the battery; the positive was applied by a sponge electrode to the cervical region of the spine or to the temporal region.

A current of from one to five milliamperes was then passed through for from five to ten minutes at a sitting. The sittings were two or three a week. My cases are too few to make a positive statement, but enough to show, as it were, in what direction the wind blows, or as to what may be accomplished in some cases. I have only two cases to report with my results, or only two upon which the galvanic current was used, in the removal of the results of hæmorrhage.

CASE I.—William H., aged twenty-eight years, machinist by occupation, but, owing to ill health, was doing outdoor work, and was foreman of the construction of a sewer. In September, 1892, while filling his pipe with tobacco and lighting it, after a few puffs of smoke there was an explosion. Likely it was a cap containing the fulminate of mercury, used for igniting dynamite, which he possibly had in his pocket; as he carried his tobacco loose in his pocket, it could easily happen. After the explosion Mr. H. found he had several wounds in his face, and very soon noticed he was blind in his left eye. He was sent to me by his physician a few days after the accident. His left eye was cut through the upper lid about the middle, between the inner and outer canthus, an incision posterior to the cantho-sclerotic junction, of three-eighths of an inch in length, followed by extensive hæmorrhage from the wound into the posterior chamber.

The eye so far as external appearance was concerned, was normal. The pupil was very sluggish in response to light. Tension slightly increased.

A strong light reflected into his eye, not a glimmer of light could be seen by him. The ophthalmoscope revealed only a dark surface. The anterior chamber normal in depth and free

* Read before the New York Medical Society of Pennsylvania, May 11, 1894.

† *English International Review of Electricity*, p. 13.

‡ *Ibid.*

§ *Grandes et Petites*, vol. II, p. 5.

from hæmorrhage. After treating him for over four months with potassium iodide, jaborandi, mercury, blisters, and general tonics, without any result—after getting advice from some of the best men in the country, who told me the case was evidently hopeless—I proposed the treatment with galvanism as possibly a chance. After using it three times a week for two weeks he thought the cloud was getting thinner. After four weeks of treatment he could perceive light from darkness, and soon thereafter a small part of the red reflex from the retina could be detected from the inner part of the eye with the ophthalmoscope. At the end of two months he could see light, and the spot of reflex from the retina was increasing.

His internal treatment was continued as before. At six months the retina could be seen dimly all over the posterior part of the eye; the fibers or striæ well marked, with vision improving so as soon to be able to recognize small objects; count fingers when in close proximity. In a year's time his vision was $\frac{1}{2}$ —, with the striæ still present. While he does not have working vision, he has still useful vision left with the injured eye.

CASE II.—H. S., aged forty-two years. Hæmorrhagic retinitis, possibly caused by diabetes.

In June, 1890, had the first attack of hæmorrhage, following some exertion. A few moments following he noticed he could not perceive light with one eye. The ophthalmoscope revealed a very faint reflex, but under general treatment it was partly absorbed in three months. Just at this time he had an attack in the other eye, which was almost as bad as the first. The second eye cleared up fairly well, vision improved in both eyes, but the hæmorrhages recurred in both eyes during the year. As one eye would improve, the other would get worse. After a year's treatment, directed to the diabetes and the general health, I gave him galvanism once a week to both eyes. In a short time both eyes had cleared to vision $\frac{1}{2}$, when, in a few months, another hæmorrhage occurred in the first eye, again completely shutting out all light. The galvanic current was continued only once a week, as he lived quite a distance from the city. In two months the vision had markedly improved, and has continued to hold at least its own. There has been no hæmorrhage now in either eye for over a year. His vision is better the slightest exertion would bring on a hæmorrhage; now he can do light work on the farm; and, as there has been no recurrence of the hæmorrhage, with his vision possibly still improving, there has been marked improvement in the condition of the blood-vessels, as well as in the absorption of the hæmorrhage.

Galvanism, then, in these cases has at least been quite an addition in their treatment, and much of the benefit is due to its use.

AN ERRATIC CASE OF SMALL-POX.

By THOMAS J. BARTON, M.D.

CHICAGO, ILL.

C. L. R., aged thirty years, a man of active outdoor habits, exposed to the miasm of a pest, came home sick on Wednesday, February 22d. He remained at home on Friday and went for work on Friday. I found him, on the first, slightly indisposed. I prescribed a mild laxative with quinine, gr. 2, four times. It will be noticed that he had no physical or toxicæsthesia. I mention this to show the erratic nature of his

sickness. On Saturday he thought himself well, but said he would stay in a few days so as not to have a setback. On Sunday afternoon I found a great change. Tongue dry and hard like a piece of russet leather. He moved his tongue with difficulty. His mind was wandering. His eyeballs had an unsteady, quivering motion. He was very sick. On Monday morning he was much worse. His tongue was dry, hard, rough, dark, typhoid. He was drenched in perspiration. He passed his urine unconsciously, involuntarily—his bladder was empty. He was stupid, comatose, but not stertorous. His knees were sharply flexed. His pupils were equal and normal; his eyeballs quivering, unsteady. His head had a jerky motion. Temperature, 100.5°. An able and experienced practitioner who saw him at this time pronounced it a case of cerebro-spinal meningitis, and said that the patient could not live till the next morning.

In the afternoon he had convulsions; his attendants thought him dying. But on Monday evening a strange thing happened. What seemed to be four small blisters appeared on his left foot—three on the dorsal aspect, one on the plantar. Those on the dorsal aspect were situated as follows: One on the instep, one on the phalangeo-metatarsal articulation of the great toe, one on the second toe. The one on the plantar surface was directly under the heel. Simultaneously with the appearance of these blisters there was a great improvement in all his symptoms. His mind began to show a return of normal activity, he responded to questions with gradually increasing clearness, his urine no longer passed involuntarily, and by Tuesday morning, on consultation, the danger had passed away.

What, then, was this strange, this terrible power which, within two days, had carried a strong man to the brink of the grave and returned him again to the land of the living; which had thrown him down prostrate, helpless, wallowing in his own excretions; which had drenched him in perspiration, even while his mouth and tongue were dry and hard as darkest typhoid; which had racked his frame with convulsions and departed? The answer to this question was destined to appear later.

For the present we must be content to grope blindly, darkly, feeling our way with caution.

A specimen of his urine was obtained which contained albumin. Uræmia, a word which, like charity, covers a multitude of sins, was accepted as a temporary diagnosis, although manifestly incapable of explaining these curious phenomena.

For several days there continued a gradual improvement. The tongue was less typhoid, the mental eclipse less marked. But while this general improvement was going on, a curious change was taking place in what I have described as nothing to be four small blisters on his left foot. For, unlike blisters, they were gradually increasing in size by constant processes of growth and development. The one on the plantar surface of the heel, which first appeared on Monday evening, was about the size of a small five-cent piece by Tuesday morning. It was money in form as a silver half dollar; gradually increasing, it measured on Friday evening three inches and a half by two inches. The three on the dorsal aspect of the foot were somewhat cylindrical in shape, the process of development. The one on the instep and the one on the metatarsal articulation of the great toe were both as large as looking from the side on the second toe the smaller.

The gradual development of these so-called blisters, whose most striking peculiarity was their rapid increase in size, led me to think that they were not really blisters, but rather a peculiar kind of biological process of an unknown kind. That fact was strengthened by the fact that they were not attended by hæmorrhage, their contents, on being opened, were found not to be attended

* Read before the Medical Society of the County of DuSable, N. Y. June 10, 1894.

except by being scraped out entirely. On scraping away their contents, the skin beneath was not smooth and whole as we find beneath a blister, but indented with slight erosions. In the middle of each blister was a hole entirely through the skin. The hole through the skin beneath the large blister under the heel was larger than a silver quarter of a dollar.

What, then, I said to myself, are these strange objects, so unlike anything I have ever seen? To add to my embarrassment, on Friday the patient was worse. The fever returned and the temperature became higher than at any time during his sickness—viz., 103°5'. His tongue became again dry and hard and his mind more wandering. But while my mind was filled with gloomy forebodings, a discovery was made which threw a flood of light on the case. It was discovered that, about two weeks before his sickness, he had on several occasions been exposed to the contagion of small-pox. Could this, then, be a case of variola? Is this second access of fever the secondary fever of small-pox?

The entire absence of any eruption on any part of his body except the left foot was certainly a curious and unlikely thing to occur in small-pox. The external appearance of those blisters was totally unlike the variolous pock. There was no central depression whatever. On the contrary, they were smoothly convex, as an ordinary blister. But, if not variolous pocks, what were they? Blisters in the ordinary sense they certainly were not. Their gradual growth and development and the nature of their contents forbade that idea. Besides, nothing had been done to produce a blister. It is true, a mustard draught had been applied to the soles of his feet between two cloths. But no mustard had touched the dorsal surface on which three were situated, and the draught had not extended back to the heel, where the big pock originated. Besides, the big pock originated where the cuticle is thick and hard as leather, and it is, moreover, very unusual for mustard to raise a blister. There is, then, not the slightest reason for adhering to the name of blister which we temporarily applied.

The vesicle of chicken-pox discharges its contents like an ordinary blister on being opened—in other words, it is unicellular. The vesicle of small-pox, on the other hand, being multicellular, cannot discharge its contents on being opened. The multicellular nature of the vesicle of variola is, in fact, its most pathognomonic feature.

In our Red Hook epidemic, in all the early cases, the central depression in the vesicle was wanting. This, in fact, caused us to doubt at first whether it was really an epidemic of small-pox. In many epidemics convulsions are a common symptom. In our epidemic the only case of convulsions was that of C. I. R. The case of C. I. R. was, in fact, aside from the erratic eruption, one of the most typical cases occurring in our epidemic. A case of a little girl, aged seven years, occurring in a neighboring house, furnished a good parallel. In both cases the attack was sudden; both patients were stupid, insensible, comatose; both passed their urine involuntarily; in both the urine contained a mucous matter and that peculiar motion of the head and eyeballs, as that the girl's father, in describing her symptoms to me, used the expression, "Just like Clint."; both were better as soon as the heat of the eruption appeared. With the exception of heat on the skin and their loss of reason of sense, in which the temperature went higher than the primary fever.

Another case, occurring in the practice of my friend Dr. Pritchard, might be regarded as a repetition of that one in the location of the eruption on C. I. R.'s left foot. This was a case of a young man about fifty years of age, who first presented a pock on the left foot the epidemic. Being a man known to me, his case was followed. He told me of a case of something similar to the pock on his foot, which occurred in his family. I always knew that out

in a few days with iodine." He accordingly painted his back with tincture of iodine. The region painted became the seat of confluent small-pox. On all other parts of his body the eruption was very slight.

Now, C. I. R., on the Wednesday preceding his sickness, did considerable walking. It will be noticed that the four vesicles were situated exactly where the irritation of walking might take effect like the tincture of iodine. The biggest one was situated directly under the heel, where the whole weight of the body is thrown at every step; one on the instep, where the shoe always pinches; one on the phalangeo-metatarsal articulation of the great toe, the next prominent point of pressure. But what of the second toe? Now, it so happens that in the case of C. I. R. the second toe overrides its two neighbors, and thereby becomes a point of pressure. Thus we account for the location of the four vesicles.

Those who wish to investigate further the curious subject of the abnormal distribution of eruptions in exanthemata should read Trousseau's lecture on Defaced Scarlatina.

Any one who has had much experience in vaccination must have noticed the many curious forms of the accompanying eruption.

Dr. Cookingham, a man of unerring medical instinct, who saw the holes in C. I. R.'s foot, was struck with their resemblance to vaccination sores. Their origin, in fact, was entirely similar. In vaccination all the eruption of a case of cow-pox is concentrated in one or two places.

In the case of C. I. R. all the eruption of a severe case of small-pox was concentrated in four places.

As cow-pox and small-pox are so nearly allied, it is not strange that the effects are similar when they are concentrated in a few places.

[In the discussion Dr. Pritchard said:

"I desire to add a word on a point barely noticed by Dr. Barton—viz., the little value of the central depression of the small-pox vesicle as a point in diagnosis.

"In the first four cases of the Red Hook epidemic, out of hundreds of vesicles, we were unable to find a single one with a well-marked central depression.

"Our examination was thorough and careful, for we were anxious to make out a diagnosis, not alone of the individual cases, but of the epidemic.

"In spite of the lack of the central depression, we pronounced them small-pox, and the future history of the epidemic proved that our diagnosis was correct.

"I will add that, out of twenty cases, there was one death—a mortality of five per cent."

Dr. Cotter said:

"Dr. Barton's case is certainly a curious illustration of the protein forms which disease is capable of assuming.

"Diseases come to us, as it were, in masks and disguises, as though with intention to deceive us.

"Trousseau says, speaking of small-pox: 'The abundant sweat that sometimes accompanies the fever of incubation usually announces that confluent small-pox is not to be feared.'

"This case is a striking illustration of the wisdom of that remark. The sweat was prodigiously abundant; there were four vesicles, perfectly discrete.

"Taken altogether, it was a most remarkable example of that dread disease which was once, in the words of Macaulay, of all the ministers of death the most terrible, but over which science has since achieved a succession of glorious and beneficent victories."

CASES OF

VASO-MOTOR RHINITIS FROM MALARIAL POISON.

By WALTER F. CHAPPELL, M. D., M. R. C. S.

SUBJUGAN TO THE THROAT AND NOSE DEPARTMENT OF
THE MANHATTAN EYE AND EAR HOSPITAL, NEW YORK.

The poison of malaria is such an important element in considering the cause and course of so many of the diseases we are asked to treat that the following histories seem worthy of reporting:

CASE I.—Miss F., aged eighteen years, consulted me on the 27th of November, 1893, and gave the following history: Her mother, two sisters, and herself had had slight attacks of malaria, off and on, since childhood, and the patient always felt she had some malarial poison about her. On the 15th of November, 1893, after returning to the city from the mountains, she was awakened about five o'clock in the morning with a chilly sensation, followed in half an hour by violent attacks of sneezing and a watery discharge from the nose, which became so profuse that it saturated nine or ten large handkerchiefs in an hour. This condition continued until about 8 A. M., when the attack began to subside and disappeared completely by eleven o'clock. During the afternoon and evening considerable languor and drowsiness was experienced. On retiring the next night she slept heavily until five in the morning, when another attack set in. These symptoms recurred daily for a week. Various local remedies and interpal medication were employed, with no relief, until quinine was given. Small doses of this remedy modified the symptoms. Increasing the doses and regulating them as would be done for a malarial attack stopped the sneezing and rhinorrhœa within forty-eight hours. The symptoms did not return again until six months later, when in June, 1894, there was a recurrence similar to the previous attack, the paroxysms occurring every other day instead of daily as on the previous occasion. Quinine stopped the attacks at once.

CASE II.—Mr. I., aged fifty years. Rheumatic and malarial history, with attacks of both diseases at intervals since childhood. In April, 1891, while on a visit of two weeks in the country, he had chilly feelings every morning. The day following his return to the city Mr. I. was awakened by what he supposed was a severe cold in the head. On rising he felt weak and depressed, but as the morning progressed his condition improved and by 11 A. M. all the symptoms of a cold had disappeared. The next day was passed in comparative comfort; but the day following, the nasal symptoms reappeared with a temperature of 101° F., and a general feeling of distress and decided chilly sensations. This condition recurred every second day for a week, then daily. Antirheumatics and numerous other drugs were administered and applied by various physicians whom Mr. I. consulted without benefit. Large doses of quinine gave immediate relief. Several subsequent attacks have also been controlled by quinine.

CASE III.—M. J., aged thirty-one years, came to the throat department of the Manhattan Hospital in June, 1894, and gave the following history: During the past five years he had suffered from a constant coldness of the mucous membrane of the nasal fossæ, whatever cold he also rode in the winter time, and on the slightest change in the temperature. During this period he had had three attacks of intermittent fever, the first attack of this character in 1891, the second in 1892, and the third in 1893. Each time he felt weak and depressed. Early in April, 1894, while visiting in the country, he noticed that some months ago he came with a cold in the head which passed off on the day advanced. About the same time he began to have cold sensations in the early morning.

This condition continued with increasing intensity until she presented herself at the hospital with both nasal chambers occluded, and the upper lip and cheek somewhat excoriated by the irritating properties of the nasal discharge. Her general condition was one of anæmia. Various remedies were given to control the nasal discharge and to improve the physical condition, with little relief.

The treatment was then framed as for an attack of malarial disease, and proved successful immediately. The attacks were absent for a week, when they returned after a day of violent exertion, but were controlled by quinine, and she has continued well ever since.

CASE IV.—Mrs. T., aged forty-two years. Early in life she had several attacks of intermittent fever. During the past ten years she had spent her summers in a malarial district, and, although there had been no recent attack of intermittent fever, she never felt well. Recently she had awakened every morning about four o'clock with a chilly sensation, which continued at intervals until about 11 A. M. She felt chilly and tired most of the time, and constantly wore a shawl in the house. Her complexion was ashy in appearance. I had prescribed for several attacks of malarial disease and at different times had the temperature taken daily for more than a month, and never found it below 99° F. In April of 1893 and 1894, after visiting Lakewood for two weeks, Mrs. T. had attacks of vaso-motor rhinitis, accompanied by severe chills and high fever, the temperature ranging from 103° F. to 105° F. During the first attack the symptoms appeared daily, but the following April they appeared every other day. Quinine in large doses was administered for both attacks and controlled them almost immediately.

The four histories presented are those of the most marked cases seen, but notes of some ten others of a similar nature have been considered, and in view of the experience from these cases there is little doubt that many which are not diagnosticated as such are truly of malarial origin.

The symptoms of rhinitis yielded to the administration of quinine in some patients, while others had their symptoms modified by it, showing that some were caused by malarial poison alone, while the others had a malarial element in them which possibly determined their course and symptoms. Subjects of chronic malarial poisoning seem most liable to this form of rhinitis.

Severe chills and high temperature are not usual during the nasal attacks, although in one of my cases the temperature reached 105° F. The average temperature in all the cases was 100° F. during the morning, when the sneezing and rhinorrhœa were severe, and normal in the afternoon and evening.

THE FIRST FOURTY-SECOND SERIES.

A Quick Answer.—A correspondent sends us a story told of an old country doctor down East. In the latter years of his life his wits became very weak, necessitating the wearing of a cap of steel hoops. One day in the old gentleman was sitting alone on Broadway Street in Boston. Mr. Jones came along and said: "Hi, doctor, do you get better?" "Not so better folks," said the poor man? "I asked the doctor—Michael Reilly."

The University of Virginia.—The University of Virginia announces that Dr. T. M. Jones has been appointed temporary lecturer on constitution and that the permanent appointment will shortly be made known.

THE

NEW YORK MEDICAL JOURNAL,

*A Weekly Review of Medicine.*Published by
D. APPLETON & CO.Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 29, 1894.

DIPHTHERIA AT THE BUDAPESTH CONGRESS.

The *British Medical Journal* for September 15th summarizes a considerable portion of the work done at the Eighth International Congress of Hygiene and Demography, recently held in Budapesth. Prominent among the subjects that received elaborate consideration was diphtheria. Dr. Billings, of the United States Army, presented a report on the statistics of diphtheria and membranous croup in the United States. It appeared from this report that in every thousand deaths in the whole country, for the census year ending May 31, 1890, 49.54 were due to diphtheria and croup. A similar report for the United Kingdom was presented by Dr. Edward Seaton. In this report it was stated that for the years 1890-'92 one hundred and ninety-two persons in every million of the population of England and Wales had died of diphtheria. A similar report was presented by Professor Loeffler, of Greifswald.

M. Roux made a communication with regard to the antitoxine treatment of the disease, and gave the statistics of the use of this treatment in the Paris *Hôpital des enfants malades*. From the 1st of February to the 24th of July 448 children had been admitted into the diphtheria pavilion, and of this number 109 had died—a mortality of 24.33 per cent. In the four previous years, 3,971 patients had been admitted, and 51.71 per cent. had died. The improvement in the death-rate attributable to the antitoxine treatment, therefore, had been 27.38 per cent. Still more satisfactory results were reported from the *Hôpital Trousseau*. Good as these results were, M. Roux thought that they might be improved still further, by stricter isolation of the patients, for many deaths after tracheotomy were due to broncho-pneumonia, and it had been noticed that a series of such cases might follow the admission of a child suffering with diphtheria associated with the presence of streptococci.

Concerning the prophylactic efficacy of the antitoxine serum, Dr. Aronson, of Berlin, reported that he had thus inoculated 157 children belonging to families in which a case of diphtheria had occurred, and only two of them had contracted the disease, and that had been of a very mild type. He had used the serum of the immunized horse, which was three times as strong as B. G. G.

MINOR PARAGRAPHS.

DRINKING WATER AFTER A DROUGHT.

WILLIAM A. BROWN, Esq., gave an article on "Drinking Water After a Drought," in the *Medical Record* for June 14th, 1894, in which he stated that the following is the substance of a

water-shed that is likely to be tainted by human beings, either from residence or manufacturing influences, or that may be occupied more or less by animals, is at all times subject to causes which make water impure. During the ordinary conditions of weather, when the rainfall is frequent, such accumulations of impurity as may from time to time be lodged are washed off and mingling with the smaller and greater bodies of water in the streams, are subjected to that natural destruction which occurs when impurities in water are exposed to atmospheric oxygen, or by movement of the water over irregular river beds or rapid descent down sharp grades or over falls. However true this may be in ordinary times, the conditions are very seriously altered when a water-shed has been subjected to a long drought, such as portions of the United States have been suffering from for some time past. Upon water-sheds which furnish potable water a vast accumulation of impurities must take place during drought, and germs of disease of all kinds will certainly be found. These impurities, when the rains do come, will be washed down into the streams which will no doubt move under the influence of flood, and therefore the waters with their contained impurities must be carried on rapidly to the reservoirs from which distribution for consumption is made. That this water is very impure and likely to be disastrous to health can not be doubted. There is but one way to defeat this danger, and that is to drink the water only after it has been boiled. The water should be filtered also, but, as perfect filtering means slow accumulation in the vessel from which the water may be used, it is less likely to be done than boiling. But a good addendum to boiling is the quick filtering through cotton, sand, or sawdust, wherein many particles of suspended matter will be retained, but such filtration has no influence upon the minute germs of disease in suspension or upon impurities in solution; boiling is the only remedy.

THE NEW BLOOMINGDALE ASYLUM.

It is announced that the task of transferring the patients to the new establishment in White Plains has been completed. To move eight hundred lunatics a distance of twenty miles, more or less, without accident and almost without attracting attention, is an achievement requiring no ordinary amount of forethought and attention to details. The medical superintendent, Dr. Lyon, is entitled to great credit for the success with which the transfer has been made.

ANTHROPOLOGY AT THE ELMIRA REFORMATORY.

THE *Eighteenth Year Book of the New York State Reformatory at Elmira*, which is a handsome and instructive volume, contains a section entitled Short Notes in Anthropology, by the physician of the institution, Dr. Hamilton D. Wey. Portraits and various bodily measurements are given of a number of individuals with criminal tendencies, some of whom are allowed to give their own accounts of their past histories, and these are particularly interesting.

ITEMS, ETC.

The Death of Dr. William A. M. Wainwright, of Hartford, took place on Monday, the 24th inst., as the result of a most unfortunate accident. It is said that he was engaged in cleaning a pistol, and that it exploded and sent a ball into his abdomen. Dr. Wainwright was one of the best known and most highly esteemed practitioners in Connecticut, not only for his professional attainments, but also for his chivalry and gentility. He was a son of the late Bishop Wainwright, of

New York. He received his medical degree from the College of Physicians and Surgeons (now the Medical School of Columbia College) in 1867. After having served for the usual term of two years on the surgical house staff of the New York Hospital, he established himself in practice in Hartford, where he speedily attained to an assured position. He was fifty years old at the time of his death. He was the author of an interesting *Medical History of Hartford County*, originally published as a contribution to a *Memorial History* of that county.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 25, 1894:

DISEASES.	Week ending Sept. 18.		Week ending Sept. 25.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	24	6	39	3
Scarlet fever.....	28	1	32	4
Cerebro-spinal meningitis...	0	0	1	1
Mumps.....	21	5	15	3
Diphtheria.....	105	24	98	14
Small-pox.....	8	2	1	1
Tuberculosis.....	81	110	146	92

Change of Address.—Dr. Samuel M. Brickner, to No. 174 West Eightieth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 2 to September 25, 1894:*

KRAN, JEFFERSON R., Captain and Assistant Surgeon, is granted leave of absence for twenty days, to take effect on October 10, 1894.

CORSON, JOSEPH K., Major and Surgeon, is granted leave of absence for one month, to take effect on being relieved from duty at Washington Barracks, D. C., with permission to apply for an extension of fifteen days.

MATTHEWS, WASHINGTON, Major and Surgeon, is granted leave of absence for four months on a surgeon's certificate of disability.

ELMER, CHARLES B., Captain and Assistant Surgeon, is granted leave of absence for one month and fifteen days, to take effect on or about September 15, 1894.

KENNEDY, JAMES M., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Custer, Montana, and will report in person for duty at Camp Merritt, Montana.

KIMBALL, JAMES P., Major and Surgeon, is granted leave of absence for one month, to take effect after the termination of present field duty at Raton, N. M.

GRAY, W. W., Captain and Assistant Surgeon, is granted leave of absence for twenty days, to take effect upon the arrival of a detached officer at Fort Schuyler.

SMITH, CHARLES, Major and Surgeon, and PERLEY, HARRY O., Captain and Assistant Surgeon, are detached and detailed to represent the Medical Department of the Army at the Twenty-second meeting of the American Public Health Association to be held at Montreal, Canada, September 2 to 10, 1894.

CHAMBERLAIN, PETER J. A., Major and Surgeon, is relieved from duty at Fort McPherson, Georgia, to take effect upon the expiration of his present leave of absence, and ordered to Fort Henry, Tenn., relieving DAVIS, WILLIAM R., Captain and Assistant Surgeon. Captain Davis, upon being relieved by Major Chamberlain, will report for duty at Fort Brady, Michigan, relieving CHAMBERLAIN, PAUL, Captain and Assistant Surgeon. Cap-

tain Clendenin, upon being relieved by Captain Davis, will report for duty at Fort Warren, Massachusetts.

So much of the ordinary leave granted to LIPPITT, WILLIAM F., First Lieutenant and Assistant Surgeon, as is embraced in the period from August 10 to September 25, 1894, is changed to leave of absence on surgeon's certificate of disability.

BRECHENHAMS, LOUIS, Captain and Assistant Surgeon. The leave of absence granted for seven days is extended to twenty-three days.

CRONKHITE, HENRY M., Major and Surgeon, is granted leave of absence for one month.

KENDALL, WILLIAM P., Captain and Assistant Surgeon, is granted leave of absence for twenty-one days, to take effect about September 20, 1894.

CARTER, EDWARD C., Captain and Assistant Surgeon, is relieved from duty at Vancouver Barracks, Washington, and ordered to Fort Buford, South Dakota, for duty, relieving APPEL, AARON H., Captain and Assistant Surgeon. Captain Appel, on being relieved by Captain Carter, will proceed without delay to Fort Ethan Allen, Vermont, and report for duty at that post.

MACAULEY, C. N. B., Captain and Assistant Surgeon. The leave of absence granted for seven days is extended to twenty-three days.

WOODRUFF, CHARLES E., Captain and Assistant Surgeon, is relieved from duty at Fort Assiniboine, Montana, and ordered to Fort Sheridan, Illinois, for duty, relieving IVES, FRANCIS J., Captain and Assistant Surgeon. Captain Ives, on being relieved by Captain Woodruff, is ordered to Plattsburg Barracks, New York, for duty, relieving PERLEY, HARRY O., Captain and Assistant Surgeon. Captain Perley, on being relieved by Captain Ives, is ordered to Baltimore, Md., for duty as attending surgeon and examiner of recruits, relieving CRAMPTON, LOUIS W., Captain and Assistant Surgeon. Captain Crampton, on being relieved by Captain Perley, is ordered to Fort Meade, South Dakota, for duty.

Society Meetings for the Coming Week:

MONDAY, October 1st: German Medical Society of the City of New York; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Corning, N. Y., Academy of Medicine; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Boston Society for Medical Observation; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Monmouth, N. J., County Medical Society (Freehold).

TUESDAY, October 2d: New York (Historical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Oswego, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (annual), Columbia (annual)—Hudson, Orange (semi-annual)—Goshen, and Schoharie (semi-annual), N. Y.; Medical Association of Westchester, New York (annual)—Macon, Ga.; Hudson, N. J., (Jersey City), and Union, N. J., (quarterly), County Medical Societies; Baltimore Academy of Medicine; Charleston, Vt., Medical Society.

WEDNESDAY, October 3d: Society of Alumni of Jefferson Hospital; Harlem Medical Association of the City of New York; Medical Microscopy Society of Brooklyn; Medical Society of the County of Richmond (quarterly), N. Y.; Rochester, Conn., Medical Association; Farmington, Me., County Medical Society (Bi-weekly).

THURSDAY, October 4th: New York Academy of Medicine; Brooklyn Surgical Society; Society of Practitioners of the

Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, October 5th: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, October 6th: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

THE PERILS OF FOOTBALL.

PLATTSBURGH BARRACKS, N. Y., September 20, 1894.

To the Editor of the New York Medical Journal:

SIR: The paper read by Dr. Henry G. Beyer, of the navy, at a recent meeting of the American Physiological Society, entitled Football and the Physique of its Devotees, editorially noticed in your issue of the 1st inst., is an interesting contribution to the literature of the subject, and it is hoped its writer will continue his observations. So much of a sensational character pro and con has been written regarding the effects of football upon the health that a systematic study of its effects upon those who play the game for several successive seasons and a knowledge of their physical condition in after years alone can definitely settle the question. Dr. Beyer's deductions certainly appear inconclusive and his estimate of the dangers of the game is much too conservative. He evinces a desire to be judicial, but, while admitting that the opponents of the game seem to have the best of the argument, he weakens this admission by subsequently maintaining that all cases of recorded deaths would be found on investigation to be due to gross carelessness, and that all injuries that he has witnessed on the football field in games played by gentlemanly and well-matched players have been amenable to treatment and have resulted in perfect cures. I have seen many severe injuries in games between such players, but candor of course compels the acknowledgment that among scientific and well-disciplined players the element of danger is less pronounced than among average players. But ideal football is altogether exceptional. Any one who has witnessed many games even between well-bred young men knows of numerous instances of loss of temper, savage blows, and even deliberate infliction of injury to disable a successful antagonist. We can not expect the cardinal virtues to stand out conspicuously in the fierce rush and struggle and personal contact of this rougher of all games. As well might we rely upon an angry and turbulent mob of strikers to refrain from acts of violence.

It is impossible to see the true state of affairs when persons give their consent to some at school to take part in such athletic games. Their primary object, as I have known many to declare, is to play football.

The statement by Dr. Beyer relating to changes in the physique and health produced by football playing, while of interest and value, does not conclusively prove that the game is either better or worse than other athletic exercises. We might expect much pleasure from any outdoor sport requiring violent muscular effort. The opponents of the game, as I take it, do not believe in the value of the sport in many respects, but leave their opposition to it solely on the ground of peril to life and limb which in the game as now played, is not an incident of it

but an incorporate and inseparable part of it. Therefore a scientific discussion of its effects upon the physique is a different thing from an estimate of its perils. So many men have been killed, so many have been maimed, so many necks have been broken, ribs torn from their spinal attachments, etc. Such facts speak without labored statistics. It is true, figures show the relative danger of football, and according to these figures it is the most dangerous game ever played, not excepting the cruel sports of ancient Rome, and yet in many respects it is one of the best of games. At West Point, where the game was sanctioned by the authorities, notwithstanding the large number of cadets who were injured in match play, it was yet tacitly condemned as an extra-hazardous game by a standing order requiring a surgeon and an attendant with dressings and restoratives to be present at every game, and their services were usually required. During the autumn of 1893, 34 cadets played football and furnished 54 cases of accidents, each serious enough to be taken upon the sick report, or a percentage of 1.6 for each man. Out of 184 cadets under instruction in the riding hall, 17 were injured, a percentage of 0.09 for each man; 106 were taught gymnastics, of whom 9 were injured, a percentage of 0.08 for each man. Dr. W. W. Keen published some comparative statistics concerning football injuries at West Point, from data furnished by myself from the hospital records, in the *Medical News* for March 3 and 24, 1894, which are too voluminous to reproduce here, but which show that the relative dangers of football compared with other forms of athletics are immensely greater.

Nevertheless, conservative men are willing to admit that the game is capable of accomplishing much that is good, such as teaching young men self-control, courage, agility, and quick mental perception, but they are not blind to the fact that this is at the certain cost of painful injuries or death to a proportion of the players, to say nothing of the dangers of overtraining and its consequent evils.

It is desired to avoid a restricted view of the subject and to look impartially at it from all sides, and, looking at it in that way, we ask, What is the object of football? Obviously sport and physical and mental improvement. It is admitted that these objects are laudable and are more or less accomplished by the game.

Now, in the same impartial spirit, let us turn to the other side of the page and consider the price we have paid for the benefits gained. Here we read the assertions of experienced men whose opinions are entitled to respect that "there is no slugging match more brutal or more dangerous to life and limb than football as it is now played";* that "the attendance of a surgeon" (in a game of football) "is as much of a necessity as in a duel."† We read the record in the *Lancet* of twenty-seven deaths in England from football in 1893 and of a multitude of broken bones, dislocations, internal injuries, etc.; and the record in our own daily press of eight deaths in this country due to football during the brief season last fall. We are confronted with the opinion of life-insurance examiners against accepting football players as risks. We note that several schools and colleges last season prohibited the game;‡ that Professor Eliot Norton, of Harvard, maintained that it was only fit for barbarians; and, above all, we can not fail to observe the wave of popular indignation that swept over the country last autumn, set in motion by the deaths and the demoralizing exhibitions of profanity, pugilism, and other forms of brutality witnessed in games of football.

* Editor of the New York Herald.

† Dr. Weil.

‡ Kansas Normal School, University of Virginia, and others.

And the foregoing does not end the indictment against the dangers of the game; a volume could be filled with the adverse testimony and warnings that have been written and spoken by all classes in all parts of the country. It certainly appears that the weight of impartial opinion having the good of the rising generation at heart is opposed to football on account of its perils. From this standpoint, in my opinion, the game as played last season is indefensible. It has been tried, convicted, and sentenced at the bar of public opinion, and if it starts again on its career of slaughter it only remains to have it interdicted by the courts.

P. F. HARVEY, M. D.,
Major and Surgeon, U. S. Army.

THE EYE TREATMENT OF EPILEPSY.

NEW YORK, September 16, 1894.

To the Editor of the New York Medical Journal:

SIR: We can not all see through the same glasses; neither do we all think alike in politics, religion, or therapeutics.

On my return from my summer's outing, my attention has been called to a critical but courteous review by Dr. C. A. Wood of an article published by me in your *Journal* (January, 1894) on the Eye Treatment of Epilepsy.

I deem it but just to myself, as well as to those who hold similar views, to reply to some of the points raised in as terse a manner as possible.

I shall endeavor, first, to state what points Dr. Wood makes as antagonistic to the statements that have been advanced relative to the cure of functional nervous diseases by eye treatment. I shall then endeavor to answer each of these points, and to demonstrate, if possible, the inaccuracy of some of his deductions.

Dr. Wood draws the following conclusions:

1. That heterophoria (anomalies of adjustment of the eyes) is so common as to be almost universal (ninety-five per cent.).

2. That heterophoria without asthenopia is not worthy of serious recognition.

3. That heterophoria is largely dependent upon errors of refraction (ametropia).

4. That all benefits which have been obtained by tenotomies upon the eye muscles are to be attributed in part at least to a "powerful mental effect" upon the patient.

Unless eye symptoms exist, Dr. Wood regards this as the only reasonable explanation of the relief of any nervous phenomena by eye treatment.

5. He accepts the view that in all epileptics who have any eye symptoms (marked or suspected) there is an urgent necessity of an examination both for ametropia and heterophoria.

6. He acknowledges that some of the cures of epilepsy by eye treatment reported by me were due solely to the treatment of the eye muscles.

7. He sustains the view that heterophoria should be promptly treated after a correction of ametropia has been tried for some time and failed to shed light.

8. He seems to positively state that true heterophoria can not be cured or "permanently affected" by ordering lenses.

Heterophoria can be treated by lenses with brilliant results by several graduated bandages of the external eye muscles.

9. He expresses the strongest sympathy with the general popular movement against the employment of alcohol in epilepsy, until all sources of peripheral irritation have been (possibly) sought for and scientifically treated.

10. He criticizes me for failing to report the number of my epileptic patients that suffered from asthenopia before the eye treatment was begun.

To sum up Dr. Wood's conclusions, before they are answered

by me *seriatim*, it may be said that he accepts the view (once so actively combated) that the eyes may excite epilepsy, and that eye treatment alone may effect a cure in some cases; that he denies that reflex epileptic seizures can arise from the eyes without the existence of some local eye symptoms; that he believes partial tenotomies upon the eye muscles may cause benefit to epileptics by a "powerful mental effect" in some cases; that he advocates a full correction for refractive errors for a considerable time prior to treatment of the eye muscles; that he rejects the use of prisms for the treatment of heterophoria, preferring graduated tenotomies; and that he is in full accord with the investigation of the eyes and eye muscles before drugs are employed in epilepsy.

It is now about twenty years since the view that the eyes could, and very often did, cause (by reflex irritation of the nerve centers) severe headaches, neuralgias, sleeplessness, St. Vitus's dance, nervous prostration, nervous dyspepsia, epilepsy, insanity, etc., was first promulgated as a basis for the investigation and cure of these conditions.

To those who are familiar with the history of the progress and gradual acceptance of this view by the profession in spite of ridicule, bitter personalities, unconquerable prejudice, etc., it is gratifying to see the leaders of medical thought in this country and Europe falling into line; to observe authors on ophthalmology adding a chapter on eye muscles to their works; to read contributions to its literature from men who, but a few years ago, scoffed at the very thought of eye investigation in patients afflicted with nervous diseases; to notice how many qualifying and modifying statements relative to the causes of obscure nervous phenomena have crept into the leading textbooks; and to have no longer to endure the sad spectacle (so frequently thrust forward in the past) of an incensed and bigoted antagonist, weak in ammunition, trying to defend an untenable position by ridicule instead of argument and personalities in lieu of facts.

That the eye treatment in many serious nervous conditions has to-day a recognized value in the minds of the medical profession it is impossible for any one familiar with current medical literature to deny. It only remains to put such limitations upon its employment as are justified by the clinical experiences of those who have perfected themselves in the later methods of investigation, and who have followed them without prejudice for a sufficient length of time to make their conclusions of value.

I will now endeavor to reply to the criticisms made by Dr. Wood *seriatim*:

1. Is heterophoria practically universal? I think not. While it is true that but a small percentage of the human race inherit eyes that are totally free from errors of refraction (ametropia) or errors of adjustment (orthophoria), the anomalous conditions are not sufficiently extreme in quite a large percentage to cause serious nervous disturbances. Again, in a percentage perhaps equally large the heterophoria is so trifling as to entail a defectively expressed but entirely harmless *latent* hypermetropia.

In these cases the "eye strain" is reduced to a minimum, simply because the defect is practically nonexistent.

I have seen in the after-care of a considerable number of epileptics absolutely cured by an extensive removal of what was originally but a slight strabismus, and some suffering most of complete restoration to health by the removal of a severe *latent* hypermetropia.

2. Is heterophoria really a curable condition of accommodation as a cause of nervous phenomena?

I would answer this hypothetical query of Dr. Wood by saying, in spite of his contrary opinion, most emphatically—Yes.

power in the external or internal) to regain single vision after correcting the refraction, provided a week elapsed after prescribing proper lenses with no marked improvement in the heterophoric condition. Furthermore, the determination of heterophoria is not alone ascertained by the phorometer—as the results of the “occlusion test,” the “Maddox-rod” test, the measurement of power of adduction, abduction, and sursumduction, the effect of prisms worn over the lenses prescribed for refractive anomalies, and many other data are often required before any intelligent conclusions can be reached even by an expert.

4. Finally, the last query of Dr. Wood has to be met.

Can the curative results of tenotomies performed upon the eye muscles justify the reported or simply evidences of a “powerful mental effect” upon the patient?

This is to me the most difficult point to answer seriously that Dr. Wood has raised. He has collected a large number of reported cases of epilepsy where various operations—such as setons, circumcision, cutting out pieces of flesh, trephining, castration, severe burns, nerve stretching, etc.—have apparently benefited epileptic subjects. He even goes so far as to recommend the removal of small pieces of flesh from different parts of the body and allowing them to heal by granulation.

I do not know how Dr. Wood performs his tenotomies upon the eye muscles; but it seems to me most absurd to discuss seriously a “powerful mental effect” upon a patient when the step in question causes absolutely no pain, no confinement in the house, and so little mental effect that children often talk to me about their dolls and toys while the step is being performed under the influence of cocaine.

A spanking or a dose of castor oil has ten times the mental effect upon a child prior to and after its application of a graduated tenotomy, yet who would discuss either of these steps as a treatment for epileptic seizures, on account of its “powerful mental effect” upon the patient?

Before we seriously discuss the latter half of Dr. Wood’s article, which is entirely composed of a compilation of various surgical steps that have been employed in the past for the relief of epileptic seizures, let me say that I have, from time to time, written strongly concerning the importance of other forms of reflex irritation in epilepsy outside of the eyes.

I have not the slightest doubt that persistent irritation from the nasal cavity, the teeth, the ovaries, the clitoris, the penis, the vulva, the rectum, and scars have excited epileptic seizures. Neither do I think we faced late behind so implausible a theory as “powerful mental impression” to explain reported cures by some of the surgical steps grouped by Dr. Wood as worthy of this explanation alone.

To place trephining, Battey’s operation, circumcision, removal of the clitoris, nerve-stretching, the excision of scars, ligation of the vertebral and carotid arteries, castration, and tracheotomy among operations (because in epileptic patients they accomplished good in some cases) that are undeserving of recognition except for their “powerful mental effect” upon the patient, seems to me unjust and illegal. It lies with Dr. Wood to prove that a source of reflex irritation was not simply removed in those cases where a cure of epilepsy followed the surgical steps that he so generally turns to credit alone.

Wood has been so busy that an early when discussed can not credit the phorometer, that the removal of a single deep-seated abscess beneath a constructed or adhesion appeared of no account, except that a “powerful mental impression” is made by its removal, that chronic constipation sufficiently cured or a stomach trouble disposed of by operation can not affect the general health directly and possibly even epilepsy; that an operation upon the uterus, a change of the position, or a

hyperæsthetic or diseased vulva can not be of direct and permanent advantage to some poor sufferer from fits; that shutting off excessive blood supply to the brain by a ligature may not (in some rare cases) render that complex organ less susceptible to irritation from local causes; that terminal nerve filaments imprisoned and pinched in a scar can not give relief when freed; and that diseased or ill-fitting teeth may be totally disregarded in treating nervous diseases?

Would it not have been more conservative and logical for Dr. Wood to say, as I do in my article on epilepsy:

“In cases where negative results have been observed in spite of a satisfactory investigation and correction of marked heterophoria and abnormalities of refraction, I would deem it wise before resorting to drugs for epileptic seizures to search for other sources of reflex peripheral irritation (such, for example as bad teeth, phimosis, rectal or uterine disease, scars, etc.).

“Furthermore, the detection of chronic kidney disease, syphilis, organic brain lesions, and depression of the skull is most important prior to the beginning of eye treatment or a search for other forms of peripheral reflex disturbances.”

Scarcely had the printer’s ink dried upon Dr. Wood’s critical article than one of the staff of a prominent journal of this city* (who seems to have access at all times to its editorial columns) hastened, with strongly partisan feeling and manifest courage, to take advantage of his anonymous position and indorse Dr. Wood’s conclusions in full. He prefaces the reproduction of these conclusions by saying (as his own contribution to the argument):

“There has been beyond doubt a factitious prominence given to the treatment of epilepsy and other nervous disorders by the surgical treatment of the eye muscles.”

It is sometimes amusing to observe how hastily the unthinking partisan grabs at any weapon with which he hopes to wound an antagonist, and with what positiveness all statements are made in anonymous contributions to medical literature.

In concluding this reply to Dr. Wood’s article I would express my appreciation of his courteous methods in argument and my gratification at his evident interest in a line of investigation that has to-day many enthusiastic supporters, and that must sooner or later receive the recognition of those who study the ocular apparatus intelligently and without prejudice of patients afflicted with nervous diseases.

AMBRIDGE L. RANNEY, M. D.

Proceedings of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

Fifth Annual Meeting, held in Washington, D. C., on Tuesday, Wednesday, and Thursday, May 22, 23, and 24, 1894.

The President, Dr. A. M. PARKER, of New York, is the Chair.

(Continued from page 467.)

Lateral Traction in Hip Disease. Dr. C. C. PARKER, of Boston, presided by invitation, a paper on this subject. He said that his observations and experiments had led him to believe that lateral traction alone did not give the desired result. The object of traction was to overcome spasm and, so far as possible, to rest. To do this the head of the bone immediately was compressed by force. He showed a drawing of the femur.

The point of application of the lateral traction force was necessarily considerably below the head of the femur. So, observers had objected that when lateral traction was applied high up the muscles were shortened, and there was a tendency to draw the bone toward the acetabulum, and so actually increase the intra-articular pressure; but it should be remembered that the muscles became lengthened and adapted to the new condition. He had found that a force of about five pounds of lateral traction should be applied for every ten pounds of longitudinal traction, and that it should be applied at twenty-five degrees beyond a right angle.

The PRESIDENT said that he could indorse most of the views presented in the paper, but he thought the proportion between the two forces should be about two pounds of lateral to eight of longitudinal traction.

Final Results in One Hundred Cases of Operation for Deformity following Hip-joint Disease.—Dr. V. P. GIBNEY, of New York, then read a paper thus entitled. He thought that in some instances it might be better to give less attention to the disease while it was active and more attention to the operative correction of the deformity resulting from the disease. He had had an opportunity to observe for a period of a dozen years the suffering of those in whom hip-joint disease was allowed to run its natural course, and he had also had an opportunity of observing for nearly as many years the result of the use of portable apparatus, so that he felt that he was in a position to view the subject from various standpoints. The author then went on to report a number of illustrative cases and to present in tabulated form the results of his operations, and of the treatment by means of portable splint and the use of the weight and pulley.

Dr. WIER said that he had had an opportunity of witnessing some of Dr. Gibney's operations and of following the cases some time afterward. He thought the method of treatment by osteotomy was exceedingly useful and capable of giving very satisfactory results.

Dr. SAMUEL KETCH, of New York, said that it seemed to him that the results given in the paper indicated that the use of force in the reduction of deformity was a dangerous practice, and one which, in his opinion, should be abandoned.

Dr. WHITMAN said that the author seemed to be wavering in his belief as to whether it was profitable to prevent these deformities, because it was so easy to correct them after they had occurred. He felt sure that Dr. Gibney was familiar with many neglected cases in which adduction, flexion, and upward dislocation, had occurred, and that he was not unmindful of the fact that the latter condition could not be corrected by any operation. If he had understood the author correctly his remarks had been especially aimed against dispendary cases.

Dr. ABRAHAM E. COOK, of Hartford, then gave the details of two cases in which, he had obtained gratifying results from the employment of osteotomy.

Dr. ARTHUR L. GARRITT asked if Dr. Gibney would operate for the relief of the deformity in cases where sinuses were still discharging.

Dr. GIBNEY replied that he would wait for the sinuses to close, but that he would hasten this process by cauterizing and clearing the sinuses. He had long been of the opinion that in cases where sinuses had become acute symptoms and where deformity already existed, it was better not to correct the deformity forcibly, but to wait until the formation of an abscess in the deep and inaccessible part. He wished to place himself on record as unhesitatingly opposed to a severe deformity to correct in any case of the disease, but whose changes had occurred in the skull and neck of the femur as a result, for example, of the establishment before such cases had come under

observation of the orthopedic surgeon, and where there was a probable fusion of the neck and head with the acetabulum, he thought it better to let the disease run its course. He certainly could not agree with Dr. Ketch in regarding the forcible correction of these deformities as a practice so dangerous that it should be abandoned. There were many cases with acute symptoms where no splint could be applied until the deformity had been corrected. Experience had taught him that it was very important after the correction of the deformity, particularly after the operation of osteotomy, to see that the patient wore a short Thomas splint for a considerable time after the operation.

The PRESIDENT remarked that in nearly all cases the deformity could be overcome by rest in bed and the use of the weight and pulley.

Excision of the Wrist by a New Method.—Dr. HERMAN MYNTER, of Buffalo, read, by invitation, a paper on this subject. He said that as usually practiced excision was resorted to in old and neglected cases in which it was impossible to remove the fatty degenerated and softened bones except in a piecemeal way, thus leaving much tuberculous material behind in the wound. Professor Stuttgart, of Copenhagen, had advocated a new method of making the incision so as to gain a better access to the metacarpus, thus making it possible to remove the bones in one or two large pieces. The operation included a supplementary incision made longitudinally between the third and fourth metacarpal bones. It of course made necessary the ligation of the superficial and deep palmar arches. By this new method it was extremely easy to excise the whole carpus in two portions, and then by packing the cavity with iodoform gauze healing by first intention could be secured. It was not eight weeks since he had performed this operation on a woman, and she was able to extend and flex the wrist and move the fingers.

Osteoclasis.—Dr. F. S. COOLIDGE, of Chicago, then made some remarks on osteoclasis, and demonstrated the action of the Lorenz osteoclast. Lorenz had used it for six years and had obtained most excellent results. The instrument was intended especially for the correction of deformities of the leg. It consisted of two plates, one movable and the other fixed. It was provided with very long handles which gave a tremendous leverage, but owing to the very fine screw thread the power was perfectly under control. The plates were placed at such an angle that during the performance of osteoclasis they would usually be at right angles to the bone at the moment of producing the fracture. With this instrument osteoclasis rivaled osteotomy in its exactness. With this instrument one could fracture the bone in any desired direction and within a small fraction of an inch of the desired point. In most cases the fracture was subperiosteal. The instrument was also useful for correcting the deformity of knock-knee at one sitting without rupturing the ligaments of the knee. After doing this it was proper that the patient should wear a knock-knee brace constantly for about one year, after which a cure would have been effected. There was but very little pain except for the first twenty-four hours after operation. As osteoclasis with this instrument was as exact as osteotomy and without its dangers, the speaker thought that it was the preferable method of treating these cases of deformity.

Dr. T. HALSTED MYERS, of New York, remarked that if it was necessary to wear a knock-knee brace for a year after osteoclasis, there was no advantage in the method over purely mechanical treatment, for by the latter a cure could be effected in the same time.

The PRESIDENT said that if the Rizzoli osteoclast was made sufficiently rigid, it would be found to be one of the best

instruments obtainable. Next to it, in his opinion, came the Grattan osteoclast. He thought osteoclasts should be done in preference to osteotomy wherever possible, but the former was not suitable for producing fractures near a joint. From our knowledge of the pathology and aetiology of genu valgum it was hardly to be supposed that the deformity could be removed by osteoclasts without supplementing it with osteotomy or osteoclasis in the shaft of the bone.

Dr. COOLIDGE said he considered the instrument especially suitable for the correction of the anterior and posterior flexions of the knee joint.

Flat-foot.—Dr. ROYAL WHITMAN opened the discussion on this subject. He said that Dr. Shaffer's theory of flat-foot was that it was caused by a primary contraction of the tendo Achillis, but as a matter of fact each individual muscle had been accused at times of being the cause of this affection. In his opinion, most of the theories had mistaken effect for cause. Flat-foot was the result of the relative disproportion between the work performed and the weight to be supported and the strength of the supporting structures. It was most often the result of habitual improper attitude. A flat foot was a dislocated foot, and hence the resistance of the tendo Achillis was often more apparent than real. It also followed from this that if flat-foot was to be cured the dislocation must be reduced and kept reduced. In addition to this, it was, of course, necessary that the balance of power should be regulated by treatment directed to the muscles and to the position assumed by the foot. In his experience flat-foot had proved to be an eminently curable affection, the age of the patient and the duration of the condition being important factors in the prognosis. He did not believe in resort to cutting operations of any kind, as he had never seen them followed by any permanent or satisfactory result. His statements were positive, but they were based on an experience of upward of a thousand cases of flat-foot.

Dr. WRIEL said that he had obtained very satisfactory results by following Dr. Whitman's method of treatment. He had endeavored to simplify it somewhat in the preparation of the pattern by making this out of three layers of crinoline applied to the foot in strips and dipped in thick plaster-of-Paris cream. From this pattern the plates were cast out of an alloy the chief ingredient of which was phosphor bronze.

Dr. ALLEN B. COOK, of Hartford, said that if the old-fashioned flat foot springs were properly constructed they would be found to meet every indication of flat foot.

Dr. WHITMAN said that he allowed to these springs were strongly on the ground that they allowed a lateral broadening of the foot, which was something to be especially guarded against.

Dr. COOK replied that the lateral pressure was furnished by the patient's shoe.

Rhachitic Deformity.—Dr. A. J. COOK, of New York, was invited to open the discussion. After sketching the rapid increase of rickets in this country in the past thirty years, as a result of our unrestricted immigration, he remarked that in the future the treatment of rhachitis would be a serious matter, as a medical problem. He then gave a detailed description of the various lesions and deformations found in cases of rhachitis. Speaking of the bone, he said that it was possible to produce, to entirely disappear, the rhachitic condition which he indicated it had not lasted for a very long time. The frequent occurrence in children of lesions of the localized "Hutchinson teeth" had previously been recognized for the first time, as cases that all really was the result of rickets. Many cases of so-called "growing pains" were nothing more than rickets of the epiphyses. It should be remembered that in rickets the marrow suffered as well as the bone, and that both, in the

tary and voluntary muscles were involved. Rhachitic pseudo-paralysis was not a real paralysis, but was simply a marked weakness of the muscles. The heart was usually large in rhachitic subjects, and the arteries small. The muscular coats of the stomach and intestines did not escape the general weakness, and hence constipation and dyspeptic symptoms were often quite prominent.

Dr. BENJAMIN LEE, of Philadelphia, said that, in his opinion, rickets was essentially a failure on the part of the system to assimilate the earthy salts, particularly the salts of calcium. It was a well-established fact that children might be even born rhachitic. Such infants not uncommonly appeared well developed and even robust during the first months of life, and consequently the rhachitic condition was frequently overlooked. Tetany and laryngismus stridulus were common symptoms of rhachitis. Special care was necessary to avoid confounding the early symptoms with those of uncomplicated bronchitis and gastro-enteric catarrh. In conclusion, the author said that rickets, like its congener scurvy of infancy, had been rapidly increasing recently, and he thought this was probably due to the very extensive use of sterilized milk.

Dr. SAMUEL KETCH, of New York, referring to the prevention of deformity, said that one of the most important prophylactic measures was the avoidance of injurious position in early rickets. This was especially true in the stage of tenderness. The portable frames and similar contrivances were very useful in carrying out a postural method of treatment. He emphasized the great value of cautious, systematic, and persistent manual pressure made daily with a view to correcting the milder rhachitic deformities. The medicinal treatment should not be according to any routine plan, but should be adapted to each individual case. In carrying out manual correction, the ease with which the bones could be sprung toward their normal position should be the measure of the force to be employed. Ordinarily the treatment should not be painful, and should only be kept up for a few minutes at a time. It should be a cardinal rule that, as long as the bones were at the stage of softening, mechanical treatment should be persistently followed.

(To be continued.)

Book Notices.

A Treatise on the Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine. By AUGUST FLEURY, M.D., LL.D., Late Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, New York, etc. Seventh Edition, thoroughly revised by FREDERICK P. HENRY, A.M., M.D., Professor of the Principles and Practice of Medicine in the Woman's Medical College of Pennsylvania. Philadelphia: Lea Brothers & Co., 1894. Pp. 15-19 to 1143. [Price, \$5.]

It is only a matter of date to the author of Fleury's *Principles*, to myself, to the thousands who have learned in the cradle (tradition) of the late Dr. Flint, and to the thousands who have been inspired by great work and great life passed since 1850, that he has now to write the edition. As was to be expected, Fleury's *Principles* in the eight years that have passed, since the publication of the sixth edition, had reached the end of its commercial success. I am informed that only three copies were left at the Bellevue Hospital Medical College, where the author taught

medicine for more than a quarter of a century, during the session of 1893-'94. The work had taken its position as a medical classic and remained a fitting monument to the memory of its author. The sixth edition, published in 1886, was revised, practically to the end, by the author's own hand, and represented the last work of his useful and laborious life. It fully represented the condition of medicine at the time of its publication; and it was by far the most complete exponent of the *Principles and Practice of Medicine* of any of the six editions. That the popularity and usefulness of the work were prolonged beyond the life of the author is shown by the fact that nearly ten thousand copies of the last edition were sold within less than eight years. With the publication of the present work, Flint's *Practice* ceases to exist. The work now offered to the profession is neither Flint's *Practice* as it was nor Flint's *Practice* as it should be at the present day. While part of this notice may be regarded rather as an epitaph, I feel sure that the profession will be interested in a brief history of one of the most remarkable medical text-books of this generation.

In January, 1866, the first edition of Flint's *Practice* was issued. Its author was then in the fullness of his powers and was already widely known as a teacher and medical writer. It would seem that the publishers of the work hardly realized its importance and the almost certain prospects of its success. The first edition was manufactured with more than a due regard for economy and was not even stereotyped. Three thousand copies were printed from the actual type. Four months later, a new edition was called for, which was issued in November, 1866; but even in the short time which had elapsed since the issue of the first edition, the author had been able to make important additions and alterations. The other editions followed in 1868, 1873, 1880, and 1886, making a grand total of about fifty-five thousand copies. The work was sold on its merits alone; and its popularity was so great that it hardly seemed to require the elegant dress and attractive illustrations which characterize the best medical books of the present day. Even the edition of 1886 was printed in small type and a large page on light paper and contained only five cheap illustrative woodcuts in the chapters on diseases of the nervous system. While, perhaps, the cheapness of manufacture permitted a small price, which may have contributed to the sale of the book, the dress of the work always seemed to me to be unworthy of its merit, accustomed, as I had been, to the highest grade of mechanical execution by my own publishers. Still, the cheapness of the book had a certain merit, as I have just indicated, and did not interfere with its usefulness until it came to the question of the index to the sixth edition, which I saw through the press. One of the last things done by the author was to enter into an arrangement with Dr. William H. Flint to prepare a concise and complete index. After I had finished reading the proof of the text, I learned that the publishers had directed Dr. William H. Flint to cut down the index one-half, on the theory that an additional twenty-five pages would unduly increase the size of the book. I believed and still believe that this seriously impaired the value of the work as a book of ready reference for the busy practitioner, and that twenty-five pages added to the index would have been more useful than the thirty pages of *Chapman's Catalogue of Medical and Surgical Publications* bound in with the book's matter. The index of the sixth edition is of necessity, necessarily, imperfect, as it was hastily condensed by cutting out titles here and there. I had hoped that after the first edition had been supplied a proper index would be printed, and this was never done.

In preparing the several editions as they were called for, the publishers had no effect but great care was taken to preserve in all the successive editions the author's desire to keep his great work

fully in accord with progress in medical science. From the first, he built his *Practice of Medicine* upon the solid foundation of sound *Principles*; and the fifth and sixth editions were prepared in epoch-making times, when a revolution was taking place in medical pathology, involving labor which might well have appalled a younger brain. The author was one of the first to recognize and accept the new pathology of tuberculosis, advanced by Koch, and he eagerly followed the remarkable discoveries in bacteriology which have had such an important influence on the principles of medicine and rational therapeutics. At an age and with a training which rendered it impossible for him to study practically the subject of bacteriology, he recognized the necessity of bringing the section of his book on *Principles* fully up to the times and his inability to do this unaided. In the preparation of the fifth edition, published in 1880, he secured the collaboration of Professor William H. Welch, now of the Johns Hopkins University, who wrote nearly all of the section on Principles of Medicine and the descriptions of the anatomical characters of individual diseases. Professor Welch collaborated even more largely in the preparation of the sixth edition. I need hardly say that there is no more competent authority on the subject of pathology, and Professor Welch's contributions supplied the single possible defect in Flint's *Practice*.

I shall say nothing further about the original *Practice*. Its merits and defects are already well known to the profession; and it has filled a measure of usefulness which has been granted to few works on the subject of which it treated. If I have said that the book just issued is not a proper seventh edition, I am bound to give some reasons for such a statement.

In the first place, the book can not claim the title of *Principles and Practice of Medicine*, which appears on the title-page. Part I of the sixth edition, on Principles of Medicine, or General Pathology, covering eighty six pages, has been cut out bodily. Had the author lived to prepare a seventh edition, the principles of medicine would undoubtedly have been put forward with increased prominence, as the bearing of recent discoveries on special pathology and scientific therapeutics is constantly increasing in importance. I can well understand how Professor Welch may have been unwilling to revise this part of the work in view of the circumstances under which it was to be published, and other competent pathologists may have been unavailable; but it is to be hoped, for the credit of the publishers, that they did not solve the question of revising the part on General Pathology by the simple process of omitting it, without making every effort to secure its revision by a competent authority on that subject. The elimination of this part rendered the task of revision of the rest of the book very easy; and its execution economical and rapid.

In looking over the different editions prepared by the author, I do not find any that were revised in the manner adopted in the book just published. The old stereotyped plates have been used to an extent that I should have thought impossible. Of course entire pages are available with simply an alteration in numbering; but parts of pages have been worked in most freely, and yet the letter-press looks fairly well. Many new diseases have been introduced, and the article on dyspepsia has been rewritten. Additions and modifications have also been made in the parts treating of therapeutics, but all additions are in brackets and signed with the letter H.

I can not but regard the publication of this book with the deepest chagrin. After I had failed to obtain control of the work for the purpose of securing a revision in accordance with what I believed to be the settled plan of the author, I was assured—not by the publishers—that no revision would be permitted, and I hoped that the work would remain as a classic monument to

the author and to his devotion to the medical profession. I feel sure that the profession will share my disappointment: for whatever success the book may have, it will be evident that the title, Flint's *Practice*, is now simply a sort of trademark supposed to have a certain commercial value, and that it does not represent the work which has contributed so largely to the education and guidance of American physicians for the past twenty-seven years. Practically, the sixth edition, issued in 1886, is a much more valuable and useful work than the book just published.

In what I have written, I do not intend to reflect in any way upon Dr. Henry, and I abstain from any criticism of his work. Dr. Henry not having absolute control of the revision, I can well understand the difficulties under which he has labored. My own experience in regard to the index of the sixth edition enables me to understand his position. He has done as well as could be expected.

I wish, also, to disclaim any intentional reflection on the well-known and successful publishing house by which the book has been issued. This house, of course, publishes medical books as a matter of business and not of sentiment. The house was entitled to use every means they considered proper to secure a revision of a popular publication, and there can be no reason that is not sentimental why the commercial progress of a successful book should be arrested by the death of its author. I could not expect that the long traditions of this house would permit the firm to recognize my moral right to control Flint's *Practice*; but it is fair to say that, while these traditions involve business instincts and habits which have carried the firm to the highest pinnacle of pecuniary success, they also involve a scrupulous fairness and courtesy in all business relations. As regards the book now under consideration, it remains to be seen whether the profession will take the commercial side, of the publishers, or the sentimental side, of the writer of this notice. I feel it my duty to emphatically disclaim all responsibility for Flint's *Practice* in its present form.

AUSTIN FINE.

Handbook of Medical Microscopy for Students and General Practitioners, including Chapters on Bacteriology, Neoplasms, and Urinary Examinations. By JAMES E. REEVE, M. D., Member of the Association of American Physicians; Ex-President of the American Public Health Association, etc. With a Glossary and Numerous Illustrations (partly in colors). Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xv + 72, pp. 237. [Price, \$2.50.]

This is the most pleasing little work of its character that we have seen. Planning because of its freshness and the clarity of the author's view, but, above all, because it is calculated to encourage gentlemen in the workshop to look at them over the top of the place and dig a spot with a confidence and general spirit of cheeriness seldom seen in purely technical manuals.

But, above all, it is essential in showing to young men and women graduated before the two national confessional colleges that, in addition to their present responsibilities toward the Church, they must also be concerned with the future of the Church, with its mission and the new social conditions requiring all the knowledge and skill necessary for a participation in order to do so. All this by his presence, he is to give them the benefit of the personal experience of his profession. The future priest and very clearly, and obviously, from his own experience, must be required to be concerned in addition to his duty to his parish and to his national college. He must feel that of the duties of the priesthood of the laity, the first act is seeking throughout the body, and should continue to improve by efforts working in the same field and under the same development that he has perceived in his own and his country.

He begins his little volume with an introduction wherein he explains, and illustrates with a number of interesting and most instructive cases from his own private and consulting practice, the importance of the microscope as an aid to diagnosis. And the very first case, one concerning an unmarried woman who suffered from unaccountable asthenia, anæmia, genital irritation, etc., but upon the nature of the cause of whose malady he threw the "calcium light of truth" by discovering numerous spermatozooids in her urine, is an *argumentum ad hominem* that would scarcely be gainsaid by the stoutest opponent. His other cases are equally interesting and convincing. Especially so are the instances in which it was necessary to discriminate between the paludal and other fevers. We might perhaps question the validity of his statement that pulmonary tuberculosis can be diagnosed *always* by microscopic examination of the sputa before the determination of its nature by symptoms and physical signs is possible. We have not found it so in practice, but, as the author truly observes, there are many causes of error, even the physical state of the observer, let alone want of perfection in technique, trouble with the lenses or light, and so on, leading those of far greater skill than the reviewer can lay claim to to overlook important objects. In private practice, no doubt, the lack of a sufficient number of observations may sometimes be the reason of our failure to discover what we otherwise might, especially in chronic renal and in incipient tubercular disease.

Klebs, however, in his recent monograph on *The Causal Treatment of Tuberculosis*, would, we think, not allege so much as our author in this regard. Klebs would, rather, seek, by trial of hypodermic injections of tuberculoceidin, to establish the presence or absence of tubercle bacilli in the body.

The author's description of apparatus is good, and his advice to beginners as to what their outfit should be is valuable as coming from one who has worked his own way through and seems, also, to appreciate the need of economy felt by so many practitioners whose work is hard and not to the highest degree remunerative. In his account of reagents, their preparation and how to use them, he is concise and very plain, not lumbering his text with too much verbosity or with the description of obsolete stains or methods. The same may be said of his description of the bacteria, which he takes from Magnin and Sternberg. It is short, clear, and intelligible.

After giving all necessary directions for the examination of sputa, tissues, etc., Dr. Reeves gives us an admirable chapter of instruction in the examination of urine. He does not, perhaps, say enough about the question of specific gravity and the diurnal variations, though not at all neglecting these subjects; but he gives us, what we like to see in these days when there is so much temptation to seek after new gods, a quotation from our *old friend* Sir THOMAS WATSON, a physician of whom every student needs the hearts of the students of former days. And the author is not astray in giving such high praise to the publishers of his book, for it is certainly very beautifully printed, bound, and illustrated.

Models and theories are constructed as instruments or tools, for which the author explicitly intended to serve personally, though only in the attempt of a literature scholar, the first two cases of looking are based on a scientific ideal model.

Wilson, Phyllis. *By Your Company*. M. A. & Co. With
Tina Hartford and Judy Jones. Illustrations by Richard
Sawyer. New York: Targem, Green & Co., 1966. Pp. 139.
(Paper, \$1.00.)

This is a preliminary, working draft, and is subject to change without notice.

Too technical for high schools, it is, though far more advanced than some of the text-books used in our medical colleges twenty years ago, not up to the standard of those of the present day. But as an "advanced science manual" its excellences are many and its blemishes few. The text is far more lucid than is common with school books of physiology or on any of the cognate natural sciences, showing that the author thoroughly mastered his subject before he began to write, and did not cram to write a text-book, or seek for facts or opinions to uphold theories in regard to prohibition or other fanatical and non-scientific ideas, as is too often done to-day, to the great injury of the cause of education. Mr. Thornton has especially distinguished himself as a teacher by the histological chapters in the first part of his work. It is a great pleasure to go over it with his beautiful and numerous illustrations. And we can not say much less for the subsequent chapters, until we come to the nervous system, where we must pause more to sympathize with than to criticize him, for the subject is so notoriously difficult that it is a bugbear even to those who have had a year or two of preliminary training in a medical school. If we might, without derogating from the good impression which we wish to convey of the work before us, make a suggestion, it would be that a less elaborate account of the physiological anatomy of the nervous system would be more useful even to the advanced student. The intricate diagrammatic drawings of Meynert, which are to anatomy almost what the efforts of Turner are to art, do not seem to us to be in any way appropriate to such a work as this. We would also suggest that the drawing of a longitudinal section of the encephalon gives rather a false idea of the relations of the fornix and an entirely erroneous view of the Sylvian aqueduct.

The cuts taken from Gray and Keen, but to our surprise (and probably through some oversight) not credited, and the beautiful copies of the superb drawings of Hirschfeldt and Leveillé (duly credited), are carefully selected and well described, and would about suffice for the purposes of the average student. We would also, in all kindness, express our surprise that the author allowed himself to be deluded into accepting such a drawing as that of the stomach and annæxa on page 184.

The very neat and instructive figures on page 63, representing the minute anatomy of the conjunctival sensory nerves in man, have, unfortunately, suffered a transposition of the letters of description.

We take the liberty of thus freely discussing this work because we admire it as the best of its class, and wish for still greater merit in its future editions.

Les médecins grecs à Rome. Par MARCEL ARNAUD. Paris: Hachette et Co., 1894. Pp. x to 424.

THIS is an able and comprehensive history of medicine from the advent of the first Greek physician in Rome, about the year 300 B.C., and continuing a period of six centuries. The work abounds with happy researches and profound knowledge, and, as to physicians, it is a study of ancient and modern views, the treatment of the occupation and the profits and loss of the study will interest the student with great interest by comparing the present with the past.

BOOKS RECEIVED.

A Practical & Practical Treatise on the Principles and Practice of the Application of the Medical Museum of the University of the City of London, and the Hospital of the University of the City of London. By HENRY ARTHUR HALL, M.D., F.R.C.S., President of the Association of Medical Men, and Member of the Council of the Medical College of Philadelphia, etc.

Fourth Edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1894. Pp. 11-17 to 740.

A Practical Manual of Mental Medicine. By DR. E. REGIS, formerly Chief of Clinique of Mental Diseases, Faculty of Medicine, Paris, etc. With a Preface by M. Benjamin Ball, Clinical Professor of Mental Diseases, Faculty of Medicine, Paris. Second Edition, thoroughly revised and largely rewritten. Authorized Translation by H. M. Bannister, A.M., M.D., Late Senior Assistant Physician, Illinois Eastern Hospital for the Insane, etc. With Introduction by the Author. Utica, N.Y.: Press of the American Journal of Insanity. Pp. xvi-692.

Lehrbuch der speciellen pathologischen Anatomie. Von DR. JOHANNES ORTH, Ord. Professor der allgem. Pathologie und patholog. Anatomie, Director des patholog. Instituts in Göttingen. Achte Lieferung. (Ergänzungsband, 11. Theil.) (Hautkrankheiten, bearbeitet von DR. P. G. UNNA.) Mit 1 chromolithogr. Quarttafel. Berlin: August Hirschwald, 1894. Pp. xxix-1225.

Chemistry: General, Medical, and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. A Manual on the General Principles of the Science and their Applications in Medicine and Pharmacy. By JOHN ATTFIELD, F.R.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Fourteenth Edition. Philadelphia: Lea Brothers and Co., 1894. Pp. xx-13 to 794. [Price, \$2.75.]

A Practical Treatise on Orthopædic Surgery. Designed for the Use of Students and Practitioners. By JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery, University of Pennsylvania, etc. Illustrated with Two Hundred and Eighty-five Woodcuts. Philadelphia: Lea Brothers and Co., 1894. Pp. viii-17 to 446. [Price, \$4.]

A Manual of Hygiene. By MARY TAYLOR BISSALL, M.D., Professor of Hygiene in the Woman's Medical College of the New York Infirmary for Women and Children. New York: The Baker and Taylor Co. Pp. xii-338. [Price, \$2.]

The Treatment of Obesity. By THOR MOELLER, M.D., Chicago. [Reprinted from the *Chicago Medical Recorder*.]

A Case of Primary Tuberculosis of the Female Bladder diagnosed by Howard Kelly's New Method of Direct Inspection with Large Endoscopes. By W. L. BURRAGE, M.D., Boston. [Reprinted from the *Boston Medical and Surgical Journal*.]

Pathology of Cancer. By H. E. MUNN, M.D., Toledo, Ohio. [Reprinted from the *Toledo Medical Compend*.]

External Perineal Urethrotomy. By H. W. RAND, M.D. [Reprinted from the *Brooklyn Medical Journal*.]

La présence d'infusoires dans le sang des palustres, la vraie nature des protozoaires malariques décrits jusqu'ici et les idées des anciens médecins grecs sur le paludisme. Communication préliminaire faite à la Société médicale d'Athènes dans la séance du 7, 19 mai 1894. Par le docteur Jacques Thomopoulos.

Transactions of the Michigan State Medical Society for the Year 1894. Volume XVIII.

Transactions of the Forty-ninth Annual Meeting of the Ohio State Medical Society, held at Zanesville, May 16, 17, and 18, 1894.

Thirtieth Report of the Trustees of the Boston City Hospital; with Report of the Superintendent, the Medical and Surgical Statistics, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, Rules for the Convalescent Home, etc., for the Year 1893-1894, to January 31, 1894.

Leçons de clinique. Application de l'entomologie à la médecine légale. Par MARCEL ARNAUD, membre de l'Académie de médecine. Paris: G. Masson, 1894. [*Encyclopédie scientifique des sciences médicales*.]

Transactions of the Grant Medical College Society, Bombay, from January to December, 1894.

turn away. At the end of the finger there is to be seen a deep incision, the nail is raised, and subungual ecchymosis sets in. Although not more serious than the others, this latter accident is one from which recovery is very slow, and it takes from four to five weeks for the injured nail to fall off and be replaced by a new one.

The Treatment of Cystitis in Women.—The *Revue internationale de médecine et de chirurgie pratiques* for August 25th contains an abstract of a review of a work on this subject by Dr. Lutaud, which appeared in the *Journal de médecine de Paris*. The author remarks that the treatment of cystitis in women presents important characteristics, not only because the ætiology of the affection is distinct, but because it often occurs with remarkable suddenness and acuteness. This inflammation is often the consequence of confinement or of the traumatism of an operation. Sometimes a very insignificant matter will cause it, such as the application of a tampon of gauze or wadding to the neck of the uterus, which induces a very painful vesical tenesmus. There are two distinct varieties, the acute and the chronic. In the former, the first indication consists in quieting the tenesmus and the pain. The medication is above all local; sedatives are used, opium and belladonna being especially indicated. The following suppositories are prescribed: Morphine hydrochloride, cocaine hydrochloride, each, three twentieths of a grain; extract of belladonna, three fortieths of a grain; cacao butter, forty-five grains. One of these should be used every four hours until the tenesmus and the pain have disappeared. Belladonna may be replaced by hyoscyamus if morphine or opiates are not well borne, and the following formula substituted: Cocaine hydrochloride, three twentieths of a grain; extract of hyoscyamus, three tenths of a grain; cacao butter, forty-five grains. Three or four of these suppositories may be employed during twenty-four hours. Rectal injections of laudanum are very useful. If there is insomnia, chloral may be given, always in enemata, and the minimum dose should be sixty grains for an adult. This formula is advised: Chloral hydrate, sixty grains; yolk of an egg; water or milk, two ounces and a half. Hypodermic injections of three twentieths of a grain of morphine are still better for quieting the paroxysms of pain. Poulitices, hip baths, and fomentations on the hypogastrium are useful adjuncts to the local treatment, which is to be preferred to general treatment during the acute period. Topical applications and anodynes may also be applied in the vagina. When it is a question of combating inflammation of the neck of the bladder, belladonna or cocaine may be employed as follows: Camphorated lanolin, four hundred and fifty grains; extract of belladonna, thirty grains. This is spread on a tampon of wadding and introduced night and morning into the vagina. When the pain is very sharp, a small tampon of wadding saturated with a solution of fifteen grains of cocaine hydrochloride in three hundred grains of distilled water may be employed. Treatment by the stomach should be continued, especially during the first period. Aside from hypodermics, there are not few remedies to be used. No benefit is obtained from iodine. Some good success the author only obtained by means of potassium permanganate during the acute period, although he has some pointed suppositories constructed by the powder of one of the following solutions: Quinine and, next, tannic, scrap of tannic extract, each, from five hundred and fifty grains; distilled water, three ounces. A disadvantage of this is to be the necessity for tampons.

During the chronic period local and general medication may be employed to the same effect. When the acute and painful symptoms are diminished, intravesical medication may be applied and after careful irrigation. A rubber or a glass probe,

perfectly aseptic, is introduced, and to the end of it a syringe, holding from three to four ounces, is attached. Antiseptic solutions are used in preference, such as: Boric acid, six hundred grains; sodium borate, seventy-five grains; distilled water, a pint and a half. A rapid jet should be pushed through the syringe, which is then drawn away to allow the liquid to escape. Not more than an ounce and a half should be injected at a time, and it is still better, when the bladder is irritated, not to inject more than an ounce. Dr. Lutaud does not advise injections of nitrate of silver; he prefers iodoform, the action of which is more efficacious, especially in cystitis of blennorrhagic origin. He employs the following method: Washing with a solution of boric acid, first, then an injection of four ounces of tepid water to which has been added a teaspoonful of the following emulsion: Powdered iodoform, four hundred and fifty grains; glycerin, six hundred grains; distilled water, three hundred grains; tragacanth, four grains. Blue pyocyanin has been suggested by Neucki, of Warsaw, in injections, for blennorrhagic cystitis. As with all vesical injections in women, it should not be used except in chronic cystitis. Dr. Lutaud has obtained good results with the following solution: Blue pyocyanin, fifteen grains; boiled distilled water, a pint and a half. This is to be injected night and morning, and its use should be continued, if it is well borne, during a period of from ten to fifteen days. General medication is useful in chronic cystitis. Dr. Lutaud has had occasion to try pichi (*Fabiana imbricata*) in cystitis following gonorrhoea in women, and obtained good results. The following mixture was prescribed: Extract of pichi, one hundred and fifty grains; tincture of *Cannabis indica*, thirty grains; linden water, three ounces and three quarters. A dessertspoonful of this is to be taken every four hours. Another formula, in which buchu is associated with hyoscyamus and ammonium bromide, is the following: Ammonium bromide, one hundred and fifty grains; tincture of hyoscyamus, seventy-five grains; fluid extract of buchu, one hundred and fifty grains; distilled water, two ounces. A teaspoonful is to be taken every four hours. If there is pus in the urine, the following drink is prescribed: Benzoic acid, fifteen grains; orange-flower water, an ounce and a half; boiled water, twenty-eight ounces; sugar, three ounces. This is to be taken by the glassful between meals.

It should not be forgotten that cystitis may have a tuberculous origin, and that it may be due to calculi or produced by tumors. In this case, the treatment should be subject to various modifications.

The Diphtheria Antitoxine.—In an editorial the *North American Practitioner* says: "We all remember the extravagant claims put forth, not by Koch so much as by his followers, with reference to *tuberculin*, and, while we are open to conviction, we still will wait until the evidence 'is all in' before pronouncing for or against *antitoxine*. We certainly have cause for profound solicitude, as we behold from year to year the increased prevalence of this disease, both in Europe and in America, and if by Jennerian and Pasteurian methods the means for its control shall come to our hands, another boon hardly less than that of vaccination will be this contribution from the profession of medicine for the well-being of mankind. In London alone during the past year the mortality from diphtheria numbered 3,265. On both continents its prevalence and its mortality are assuming alarming proportions. If in any measure antitoxine shall prove an added weapon in this great conflict, by so much as it shall serve to control and cure diphtheria by so much will its value be beyond expression. While we hold ourselves wide open to conviction, we are by no means sanguine. *Antitoxines*."

Original Communications.

A STUDY OF CHILD GROWTH.

BEING A REVIEW OF
THE WORK OF DR. WILLIAM TOWNSEND PORTER,
OF ST. LOUIS.

By BAYARD HOLMES, M. D.,

PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS,
CHICAGO.

It is a thankless task to relate what everybody knows. The only excuse for such a procedure lies in the use of well-known facts in a new argument. It is far from my mind to present this or any other subject without a purpose, which it seems to me ought to be accomplished, and into the accomplishment of which my whole energy is thrown. There are those who think that scholarship and science are incompatible with the function of the reformer. By a reformer these philosophers mean a person who is anxious to secure the realization of logical inferences from scientific facts. If such is the case, and a choice of one must be made to the exclusion of the other, many would willingly sacrifice their claims to be classed as scholars or scientists.

Dr. William Townsend Porter has lately published a study of the growth of the St. Louis school children,* which contains many facts interesting to medical men. It is unnecessary to give an outline of the work of collection further than to say that a full list of anthropometric and anthropological data was secured through the co-operation of the pupils, the parents, and the teachers of the public schools, and a large number of medical students and physicians. The more technical work was done by the students and physicians; 34,354 children were examined—16,295 boys and 18,059 girls—all between the ages of six and twenty-one years. Nearly a million data were secured. These were studied by the help of a clerical force supplied by public-spirited citizens of St. Louis. The results have not all been published yet, and we await with much interest the unpublished tables. The tests for the acuteness of hearing could not be satisfactorily conducted on account of the noise in adjoining schoolrooms, and they were abandoned after several thousand children had been tested. "It was noticed that the number possessing less than the normal acuteness of hearing was very large, and more than one pupil was found who had been punished for inattention, the result of an unrecognized deafness." It should be remembered in this connection that Dr. F. Schwartz gives statistics showing that about twenty per cent. of all school children are considerably under the normal in hearing.

Should it be desired to make a study of the growth of the children in any community, two methods are possible:—(1) A number of infants could be selected and measured many times at regular intervals until they arrived at maturity. Then, by comparing these measurements, a mean value could be secured and a probable deviation from this mean could easily be deduced. Such a study of individuals through a long time, however, presents formidable

obstacles. Some of the children would surely die and some would otherwise escape the observer, and, consequently, much of his labor would be lost. Few out of many observers undertaking this problem would be able to see its completion. (2) Again, many individuals of every age could be measured once, and from these data the growth of the average child predicted. This method has the advantage of expedition. It is the method selected by Porter. The public schools contain a sufficient number of children, and among them are found almost the proportional number from each class of people. Thus 2,000 St. Louis children were selected, and it was found that 76 were the children of professional men, 579 of men of the mercantile class, 1,086 of men engaged in the manual trades, 216 of laborers, and 43 were the children of fathers classed under the heading of miscellaneous.

The accompanying table shows that the daughters of the privileged classes are considerably heavier than the daughters of manual laborers.

What is true of weight is also true of the physical development of these girls as a whole. There is little difference between the daughters of the two social classes until approaching puberty. It is unfortunate that a great number of children of manual tradesmen drop out of school at about the age of puberty. The shops and factories claim them. It may be that the larger girls, daughters of laborers, get into factories, while the smaller remain in school. If this is the case, these measurements should be corrected by the measurement of factory children and shop girls and boys. What a comment it is, anyway, upon our so-called civilization that a whole class of girls, and this the larger class, is stunted in their growth by social environment or

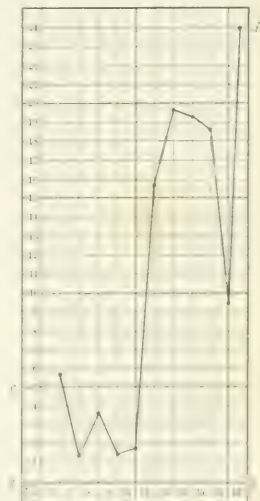


TABLE showing the weight of girls in different social classes from age 6 to 14. The Y-axis represents weight in pounds (10 to 40). The X-axis represents age (6 to 14). Two lines are plotted: one for 'Professional and Mercantile' (upper line) and one for 'Manual Labor' (lower line). Both lines show an upward trend, with the 'Professional and Mercantile' line consistently higher than the 'Manual Labor' line.

the result of social conditions. But this is not all. The public schools could be so arranged that a complete education would be given to more than 90 per cent. of the community. It is developed in a measurable and children of manual tradesmen are a much larger percentage in the lower grades than in the higher. Thus, of five hun-

* *Transactions of the St. Louis School Board, 1893-94, Vol. 1, p. 101.*

dred and sixty-two boys aged six, 17.8 per cent. were sons of the privileged classes and 42.9 per cent. were the sons of manual tradesmen, while at the age of fourteen 29.3 per cent. of four hundred and ninety-eight boys were from the former, and thirty-seven per cent. were from the latter class. This, doubtless, means that growing boys are taken out of school at twelve and thirteen and put to work in the industries of St. Louis to drive out an equal number of men engaged in these trades into enforced idleness. Or it may mean that from some other cause boys leave school before fifteen. Earle Barnes, of Leland Stanford Junior University, has suggested that the difficulty which so many boys have with their female teachers in the sixth and subsequent grades of the public schools is due to their unrecognized oncoming sexuality. . . . Such boys love contact with women. Even a whipping from the hands of a woman, or a tongue lashing, is to them a choice delight. Combine with this the natural supremacy and superiority of girls aged eleven to sixteen, both physically and mentally, over boys of the same age, and the utter ignorance of teachers and parents of these two facts, and there appears a cause adequate to remove the boys not only of the poor but of the rich from the unthinking tutelage of women. That this removal is disastrous to the education of a large percentage of the boys every one will admit. A better solution of this problem than an offhand reference to the desire of boys to work or learn business and the greed or necessity of parents would perhaps be found in a consideration of these two facts and the logical result of this consideration—namely, separation of boys and girls in the public schools during the period of prepubertal acceleration, with male teachers for the boys and female teachers for the girls.

The children of foreign birth in St. Louis were entirely too few to affect the result of this investigation. It is, however, to be remembered that the children in different countries, States, and cities are not uniform in their growth. The nativity of the children is given in the accompanying table:

The Birthplaces of 46,853 Pupils in the St. Louis Public Schools

St. Louis	79.26 per cent.
Other parts of the United States	16.92 "
Great Britain	0.63 "
Ireland	0.19 "
German States	1.97 "
Other foreign countries	0.87 "
Unknown	0.16 "

Total 100.00

The children of foreign born parents are, of course, much more numerous. The medium weight of children of German parents is compared with that of children of American parents in the accompanying table.

The difference in weight is seen to be of no great importance. The children of American parents are a trifle heavier.

When the curves of growth in weight, height, standing, height sitting, span of arms, and girth of chest are drawn on a system of co-ordinates, as has been done for height standing in Chart II, the attraction is at once arrested by the extraordinary difference in the development of girls and

THE WEIGHT OF GIRLS WHOSE PARENTS WERE BORN IN GERMANY COMPARED WITH THE WEIGHT OF GIRLS WHOSE PARENTS WERE BORN IN AMERICA.

AGE AT NEAREST BIRTHDAY.	GERMAN.		AMERICAN.	
	Number of observations	Medium weight, kilogrammes.	Number of observations	Medium weight, kilogrammes.
Six	310	19.15	398	18.76
Seven	683	20.86	861	20.82
Eight	796	23.17	1,082	22.71
Nine	796	25.09	1,023	25.07
Ten	725	27.65	1,029	27.43
Eleven	753	29.61	808	29.93
Twelve	715	33.42	779	33.17
Thirteen	518	37.58	648	38.29
Fourteen	331	42.56	565	43.12
Fifteen	183	46.77	493	46.90
Sixteen	86	49.73	265	50.06
Seventeen	49	53.93	131	52.12
Eighteen	43	52.59	100	54.03
Nineteen	22	54.26	40	52.90
Twenty	...	...	33	52.67

boys during the period of prepubertal acceleration. Girls enter this time of rapid growth at the age of eleven or

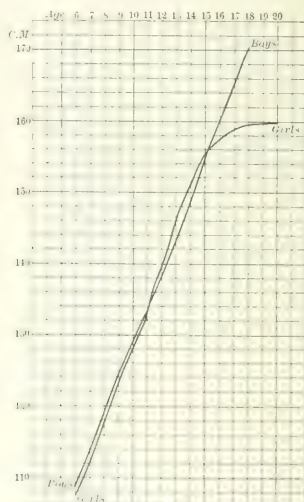


CHART II.—Height of boys and girls in St. Louis public schools; ages, six to twenty years

twelve—two years earlier than boys—and during several years they are larger than boys of the same age. Since

AGES IN YEARS AT WHICH GIRLS BEGIN AND CEASE TO BE LARGER THAN BOYS

DIMENSION	BEGIN			CEASE		
	Percentile grades			Percentile grades		
	25	50	75	25	50	75
Weight	11.5	12	11.5	16.5	13.5	11.5
Height standing	11	11	11	15	13.5	11.5
Height sitting	11	11	11	16	16.5	16.5
Span of arms	12	11	11	17	14	11.5
Girth of chest	12	12	12	16	15	15.5
Height of face from hair line to point of chin	11	...	...	15	...	...

girls are smaller than boys from birth onward, until the prepubertal acceleration, the period during which boys are smaller than girls does not begin until some time after the beginning of this acceleration and ceases a little later. The ages at which girls begin and cease to be larger than boys are given in the preceding table.

By a study of these figures it can easily be seen that big girls (seventy-five percentile grades) begin to be larger than big boys at an earlier age than that at which small girls (twenty-five percentile grades) begin to exceed small boys. The small girls remain larger than the small boys longer than the large girls remain larger than the large boys. The small girls maintain their superiority about three years and ten months, and the large girls only three years and four months.

"When we compare the average stature and weight of the school children of various cities with that of the average population we find striking differences. The Worcester, Mass., children are markedly below the average in stature, while the Toronto and Boston children are almost as markedly at the opposite extreme. The Oakland, Cal., and the St. Louis children also show opposite characteristics; the former, starting at five years of age below the general average, rise above it at the end of the period of growth, while the St. Louis children, starting above, fall below the average. The Milwaukee children represent more nearly the general average. There is also to be remarked a striking difference between the curves of comparative stature of the two sexes in the various cities. In Toronto, Milwaukee, and Boston the comparative curves in the two sexes are nearly together. In St. Louis they are quite markedly separated after the fifteenth year, while in Oakland, and especially

Worcester, the difference reaches its maximum. The Toronto the least, the others being, in order of the least to the greatest differences, Boston, St. Louis, Oakland, and then in those of stature. Here again we find the Toronto children the least well developed and the Worcester the

TABLE I.

THE HEIGHT STANDING.

AGE AT NEAREST BIRTHDAY	SEX	Number of Observations	Unit of Measure used	Average	Probable Error of Average	Probable Deviation	Relation of Probable Deviation to Age	Absolute Annual Increase of Average	Relative Annual Increase of Average	Percentile Grade	Median Percentile Grade	Mean Percentile Grade	Median Mean Average
Six	Boys	709	Centimeters	108.94	0.128	3.40	3.1	0.014	7.6	105.99	109.28	112.69	-0.29
	Girls	768		107.95	0.123	3.42	3.2	0.014	7.6	105.99	109.28	112.69	-0.43
Seven	Boys	1850		114.03	0.094	3.61	3.2	5.08	4.9	111.02	114.48	118.02	-0.45
	Girls	1791		112.92	0.080	3.75	3.3	5.28	4.9	109.72	113.44	117.07	-0.44
Eight	Boys	2226		119.13	0.082	3.89	3.3	6.10	4.7	116.08	119.77	123.58	-0.64
	Girls	2193		118.36	0.077	3.70	3.1	6.22	4.8	115.07	118.74	122.38	-0.58
Nine	Boys	2205		124.35	0.080	3.75	3.0	6.22	4.4	121.09	124.81	128.76	-0.62
	Girls	2122		123.67	0.63	3.83	3.1	5.31	4.6	120.50	124.11	127.58	-0.44
Ten	Boys	2087		128.57	0.067	3.88	3.1	4.92	3.6	125.49	129.45	133.54	-0.68
	Girls	2052		127.48	0.065	4.06	3.1	4.98	3.9	124.39	128.35	132.15	-0.43
Eleven	Boys	1919		133.84	0.099	3.23	3.2	4.97	3.6	130.03	134.04	138.29	-0.60
	Girls	1752		133.19	0.106	4.48	3.2	4.76	3.7	129.23	133.60	137.97	-0.41
Twelve	Boys	1658		138.21	0.116	4.47	3.2	4.37	3.3	134.25	138.57	142.99	-0.86
	Girls	1552		137.11	0.113	4.43	3.1	5.25	4.4	134.71	138.94	144.44	-0.43
Thirteen	Boys	1268		142.91	0.140	4.98	3.6	4.70	3.4	139.45	143.79	148.28	-0.88
	Girls	1322		141.55	0.150	4.46	3.8	7.42	5.3	140.88	145.19	151.79	-0.94
Fourteen	Boys	925		148.58	0.183	5.68	3.8	6.67	4.0	145.48	149.86	154.25	-0.78
	Girls	900		148.44	0.166	5.15	3.7	4.31	2.9	146.85	151.94	156.39	-1.21
Fifteen	Boys	490		154.90	0.286	6.33	4.1	6.32	4.3	149.88	155.25	161.86	-0.85
	Girls	481		155.04	0.154	6.01	3.4	4.20	2.8	151.25	155.85	160.58	-0.74
Sixteen	Boys	189		160.27	0.427	5.87	3.7	5.37	3.5	155.28	161.27	167.04	-1.00
	Girls	182		160.11	0.457	6.02	3.6	4.86	1.6	155.79	161.81	167.81	-0.51
Seventeen	Boys	78		165.18	0.592	5.15	4.1	4.38	3.0	160.79	166.00	171.84	-0.87
	Girls	26		159.35	0.241	3.45	2.2	1.81	1.1	156.65	162.05	167.93	-0.67
Eighteen	Boys	29		170.41	0.924	4.98	3.8	5.28	3.2	170.50			-0.09
	Girls	164		169.42	0.268	3.29	2.1	6.09	0.60	156.46	166.56	169.29	-0.08
Nineteen	Boys	35		176.46	0.438	4.04	2.6			154.32	159.56	165.27	-1.10
Twenty	Boys	71		186.44	0.358	3.08	2.0			158.88			-0.43
Twenty-one	Boys	43		189.98	0.651	4.22	2.7			160.50			-0.52

approach nearest to the general average. The comparative differences between the sexes is not so great here as in the case of stature, yet the differences are sufficiently marked, Worcester again showing the greatest and

TABLE II.

THE HEIGHT SITTING.

AGE AT NEAREST BIRTHDAY	SEX	Number of Observations	Unit of Measure used	Average	Probable Error of Average	Probable Deviation	Relation of Probable Deviation to Age	Absolute Annual Increase of Average	Relative Annual Increase of Average	Percentile Grade	Median Percentile Grade	Mean Percentile Grade	Median Mean Average
Six	Boys	714	Centimeters	61.31	0.105	2.82	4.6	66.5	3.1	59.11	60.77	63.02	-0.54
	Girls	761		60.44	0.132	2.95	4.4	55.2	2.9	58.11	60.11	62.11	-0.40
Seven	Boys	1868		68.32	0.061	2.64	4.2	65.5	2.01	61.16	63.22	65.22	-0.10
	Girls	1825		67.78	0.063	2.56	4.0	54.5	1.9	60.22	62.22	64.22	-0.14
Eight	Boys	2249		64.74	0.048	2.26	3.5	64.4	1.43	62.22	64.21	66.21	-0.17
	Girls	2200		64.07	0.044	2.04	3.2	61.7	1.37	60.22	62.21	64.21	-0.17
Nine	Boys	2258		66.73	0.049	2.31	3.5	63.7	1.19	61.65	63.65	65.65	-0.35
	Girls	2200		66.14	0.051	2.11	3.1	62.2	1.15	60.22	62.21	64.21	-0.03
Ten	Boys	2118		69.25	0.040	2.42	3.5	63.7	1.22	66.90	68.91	71.91	-0.12
	Girls	2007		68.19	0.048	2.19	3.2	62.7	1.19	66.90	68.91	71.91	-0.12
Eleven	Boys	1828		70.61	0.060	2.56	3.4	62.8	1.42	68.75	71.09	73.24	-0.12
	Girls	1748		70.11	0.112	2.37	3.1	61.7	1.44	67.64	70.11	72.58	-0.19
Twelve	Boys	1656		72.55	0.067	2.72	3.8	62.5	1.88	70.19	72.65	75.08	-0.13
	Girls	1552		72.67	0.068	2.61	3.7	61.8	1.84	70.19	72.65	75.08	-0.13
Thirteen	Boys	1282		74.20	0.076	2.74	3.7	61.9	1.65	72.03	74.49	76.88	-0.29
	Girls	1184		73.97	0.088	2.67	3.7	61.8	1.65	70.19	72.65	75.08	-0.13
Fourteen	Boys	926		76.84	0.108	3.15	4.1	61.7	2.63	74.12	76.21	78.57	-0.18
	Girls	880		76.84	0.108	3.15	4.1	61.7	2.63	74.12	76.21	78.57	-0.18
Fifteen	Boys	498		79.74	0.161	3.59	4.5	61.5	3.60	76.51	79.67	83.73	-0.07
	Girls	474		79.46	0.166	2.94	3.1	61.8	2.74	76.51	79.67	83.73	-0.07
Sixteen	Boys	1208		80.28	0.250	3.64	4.2	61.0	3.44	78.37	81.02	84.92	-0.14
	Girls	1111		80.28	0.250	3.64	4.2	61.0	3.44	78.37	81.02	84.92	-0.14
Seventeen	Boys	77		80.68	0.427	3.77	4.4	61.9	3.44	80.31	82.02	84.11	-0.54
	Girls	77		80.68	0.427	3.77	4.4	61.9	3.44	80.31	82.02	84.11	-0.54
Eighteen	Boys	31		88.24	0.346	2.50	3.5	61.7	3.44	86.86	89.10	91.60	-0.23
	Girls	31		88.24	0.346	2.50	3.5	61.7	3.44	86.86	89.10	91.60	-0.23
Nineteen	Boys	15		91.86	0.493	1.92	2.1	60.5		89.10	91.60	94.10	-0.23
	Girls	15		91.86	0.493	1.92	2.1	60.5		89.10	91.60	94.10	-0.23
Twenty	Boys	7		94.07	0.706	2.03	2.4	60.5		91.60	94.10	96.60	-0.23
	Girls	7		94.07	0.706	2.03	2.4	60.5		91.60	94.10	96.60	-0.23
Twenty-one	Boys	41		95.98	0.296	1.86	2.2			94.10			-0.14

Worcester, the difference reaches its maximum. The Toronto the least, the others being, in order of the least to the greatest differences, Boston, St. Louis, Oakland, and then in those of stature. Here again we find the Toronto children the least well developed and the Worcester the

"The cities in which the girls are taller than the boys

are, in the order of their height, from least to greatest, Oakland, St. Louis, Milwaukee, Boston, Toronto, and Worcester. The length of time during which the girls are markedly taller is, in Oakland, five; Worcester, one; and

It is evident to many physicians, in the cities at least, that there must be some change in our treatment of the girls at the beginning of the period of prepubertal accelerated growth. These charts, it is hoped, will, with the histories

of lifelong misery, suggest a relationship between relative overwork in the school-room and inadequately accomplished womanhood. It may even suggest the removal of the girl at the age of eleven or twelve entirely from school, or at least from competition with the slower growing and smaller boys for a period of two or three years. This rapid growth of girls at this period, coupled with the need of perfectly accomplished womanhood, ought to influence legislation to protect girls from the factory Moloch. It is perfectly clear to every one that if the needs of our civilization require the labor

of girls in factories and mercantile establishments, this work should not begin until the girls have got their growth. If a law may fix the minimum age for girls to work in a factory, that minimum should be at sixteen or seventeen. In Massachusetts, New York, New Jersey, and Illinois, and wherever in the United States it has been thought worth while to keep children out of factories at all, fourteen is the limit of restriction. The influence of every physician should be used to protect boys and girls from the dangers, physical and moral, of the factory and shop at least until their sixteenth year.

One of the most interesting studies of Porter is the relation between the physical development of school children and their capacity for mental labor. Take, for example, the following distribution of boys aged eleven. It will be seen at once that the boys in Grade I, the lowest grade, are lighter than the

boys in Grade II; and these, again, are lighter than those in Grade III, etc.

TABLE III.
THE WEIGHT.

AGE AT NEAREST BIRTHDAY	SEX	Number of Observations	Unit of Measure used	Average	Probable Error of Average	Probable Deviation	Relation of Probable Deviation to Average	Relation of Probable Deviation to Height	Absolute Annual Increase of Average	Relative Annual Increase of Average	Percentage Grade	Median or 50 Per Cent. Grade	75 Per Cent. Grade	Median Mucus Average
					±	±	%	%		%	%			
Six	Boys, Girls	707	Kilogram	19.75	0.054	1.43	7.2	18.1	17.70	18.55	17.70	19.85	21.27	+0.10
Seven	Boys, Girls	1814	"	21.67	0.039	1.68	7.8	19.0	19.92	20.11	19.25	21.66	23.36	-0.01
Eight	Boys, Girls	2147	"	23.78	0.042	1.96	8.2	20.0	21.11	22.00	20.81	23.87	25.85	+0.09
Nine	Boys, Girls	2188	"	25.66	0.045	2.09	8.0	21.0	22.88	24.17	22.85	26.22	28.28	+0.16
Ten	Boys, Girls	2064	"	28.32	0.049	2.33	7.9	22.0	22.67	26.07	25.04	28.36	30.81	+0.04
Eleven	Boys, Girls	1743	"	31.00	0.062	2.66	8.4	23.2	22.68	28.50	27.45	31.08	33.66	+0.08
Twelve	Boys, Girls	1676	"	33.66	0.081	3.31	9.8	24.2	22.66	30.65	29.00	33.25	35.83	-0.41
Thirteen	Boys, Girls	1242	"	36.61	0.110	3.88	10.6	26.6	21.9	32.88	30.00	36.25	39.86	-0.36
Fourteen	Boys, Girls	946	"	40.44	0.148	4.56	11.3	27.2	23.83	36.41	33.98	40.38	43.53	-0.46
Fifteen	Boys, Girls	498	"	46.32	0.227	6.06	11.0	29.8	24.78	40.04	36.00	45.49	51.76	-0.73
Sixteen	Boys, Girls	303	"	51.60	0.431	8.16	12.0	32.4	25.38	45.66	41.00	51.83	57.99	-0.23
Seventeen	Boys, Girls	221	"	55.67	0.521	4.88	7.9	33.7	26.76	51.94	49.36	56.31	61.21	-0.36
Eighteen	Girls, 130	62	"	52.61	0.244	3.70	7.0	33.0	23.66	48.27	45.52	52.52	56.47	-0.09
Nineteen	Girls, 81	52	"	52.19	0.382	3.76	7.2	32.8		48.93	46.77	52.47	55.74	+0.28
Twenty	Girls, 86	53	"	53.91	0.556	3.76	7.0	33.7		50.01	48.67	53.67	57.33	-0.34

in the other cities three years each. The Oakland girls exceed the boys in height by the tenth year, the Boston girls exceed the boys by the eleventh year, while in the other four cities the girls do not exceed the boys until the twelfth year. The boys do not completely regain their

TABLE IV.
THE SPAN OF ARMS.

AGE AT NEAREST BIRTHDAY	SEX	Number of Observations	Unit of Measure used	Average	Probable Error of Average	Probable Deviation	Relation of Probable Deviation to Average	Relation of Probable Deviation to Height	Absolute Annual Increase of Average	Relative Annual Increase of Average	Percentage Grade	Median or 50 Per Cent. Grade	75 Per Cent. Grade	Median Mucus Average
					±	±	%	%		%	%			
Six	Boys, Girls	708	Kilogram	108.35	1.044	3.85	3.5	100.3	106.66	109.57	106.66	109.57	113.60	+0.63
Seven	Boys, Girls	1802	"	112.36	0.996	4.16	3.6	100.3	107.74	111.09	107.74	111.09	114.41	+0.33
Eight	Boys, Girls	2244	"	120.07	0.988	4.18	3.5	100.8	108.65	116.52	108.65	116.52	121.71	+0.66
Nine	Boys, Girls	2272	"	125.18	0.989	4.25	3.4	100.7	109.57	121.55	109.57	121.55	125.93	+0.49
Ten	Boys, Girls	2076	"	130.22	1.013	4.70	3.6	101.0	109.4	126.19	109.4	126.19	130.61	+0.89
Eleven	Boys, Girls	1819	"	135.13	1.113	4.81	3.6	100.9	109.3	130.80	109.3	130.80	135.69	+0.36
Twelve	Boys, Girls	1664	"	140.60	1.112	4.57	3.2	101.7	110.7	135.55	110.7	135.55	140.48	+0.12
Thirteen	Boys, Girls	1281	"	145.09	1.159	5.21	3.9	101.5	110.8	140.08	110.8	140.08	145.33	+0.24
Fourteen	Boys, Girls	924	"	151.28	1.197	6.03	4.0	101.8	110.9	146.01	110.9	146.01	151.37	+0.34
Fifteen	Boys, Girls	495	"	158.12	1.321	7.15	4.5	102.3	110.7	151.81	110.7	151.81	156.79	+0.64
Sixteen	Boys, Girls	303	"	163.96	1.574	7.83	4.8	102.4	110.3	158.01	110.3	158.01	163.49	+0.53
Seventeen	Boys, Girls	221	"	168.36	1.573	5.02	3.0	102.4	109.2	164.77	109.2	164.77	169.58	+0.81
Eighteen	Boys, Girls	130	"	175.31	1.763	1.81	2.5	102.9	109.2	171.44	109.2	171.44	176.91	+0.19
Nineteen	Girls, 81	52	"	175.31	1.763	1.81	2.5	102.9	109.2	171.44	109.2	171.44	176.91	+0.19
Twenty	Girls, 86	53	"	175.31	1.763	1.81	2.5	102.9	109.2	171.44	109.2	171.44	176.91	+0.19

expressed in stature in Oakland and St. Louis and the highest in the other cities. The same is true in regard to the thickness of the arms.

MEDIUM WEIGHT OF BOYS AGED ELEVEN, DISTRIBUTED BY SCHOOL GRADES

GRADES.	Number of boys weighed.	Medium weight in kilograms.
I.....	59	28.83
II.....	311	29.74
III.....	664	30.92
IV.....	546	31.43
V.....	123	32.41
VI.....	33	33.29

In order to exclude the possibility that this difference is due to the social relation of the parents of these children or to a particular age, the following table, showing the distribution and weight of the daughters of manual tradesmen, is introduced :

MEDIUM WEIGHT IN KILOGRAMMES OF THE DAUGHTERS OF MANUAL
TRADESMEN IN GRADES.

AGE AT SEARREST BIRTHDAY	SCHOOL GRADES.							
	Kindergarten	I.	II.	III.	IV.	V.	VI.	VII.
Seven.....	19, 73	21, 14						
	* 137	187						
Eight.....	22, 60	23, 56						
	287	136						
Nine.....	24, 00	26, 33	25, 79					
	87	240	68					
Ten.....	27, 93	27, 87	28, 72					
	152	170	55					
Eleven.....	27, 39	29, 22	30, 11	29, 74				
	49	155	116	27				
Twelve.....	31, 95	32, 67	33, 69	34, 50				
	65	100	76	32				
Thirteen.....	34, 16	36, 32	39, 66	39, 16	40, 58			
	92	78	69	305	27			
Fourteen.....	38, 59	41, 31	40, 63					
	25	40	60					

* Under each weight is the number of observations.

It is evident from a study of this table also that the successful pupils are larger and heavier. How important, then, it must be for every physician to have at hand measurements of the normal child, with which to compare his young patients! They should be in some handy book of reference, now that they have been so carefully recorded by Dr. Porter. With the laws of child growth studied out for any community, the physician could compare his little patients constantly with the normal child, and notice any deviation, seek out its cause, and propose rational means of correction. Overstudy, overwork, underfeeding, underexercising, and undisturbed exercise could early be detected, and possibly corrected. It is not to be supposed that a single observation and measurement will be sufficient to establish normal, or also poor growth. The measurements must be made at some definite

oms. Some children will grow up to manhood as small boys or girls, either in the five percentile, ten percentile, twenty percentile, or thirty percentile grades, and it is the departure from their accredited position that will be significant. Any special deviation from correct proportion must be looked upon as pathological. Thus the measurements of a child place that child say in the seventy-fifth percentile grade for all measurements except the girth of chest, while this places it in the thirty percentile grade. The physician should immediately take such action as would tend to develop the capacity of the thorax. Again, should a child fall higher in the percentile grades in height, standing, and sitting than in weight, girth of chest, and muscular power, the physician should immediately consider that it is a disadvantage to be tall. More labor is required for the movements of the body, more heat is dispelled, and a greater strain is brought on the heart. Such physical exercise and such regulation of the habits of life should therefore be prescribed as tend to counteract or compensate this defect. A tall child may, under wise advice and judicious habits of life, maintain a fair degree of health and attain to length of days, who under an injudicious or foolhardy strain of occupation or play would wreck all hope of usefulness.

Porter has shown that the larger (higher percentile grades) learn more easily and are capable of greater mental work than the smaller. The slow advance of physical growth from six to eleven in girls, from six to thirteen in boys, and the rapid acceleration during the three succeeding years, is also clearly and definitely demonstrated. It is, nevertheless, common knowledge that our school curriculum is entirely inflexible. This is especially the case at ages eleven to seventeen—the Grades V to VIII. There can be no doubt that during the period of prepubertal acceleration the pressure necessary to get good or possible

TABLE V
THE GIRTH OF CHEST MIDWAY BETWEEN INSPIRATION AND EXPIRATION

PERCENTAGE OF TOTAL SELECTIONS AND SELECTIONS												
AREA AT NEAREST BIRTHDAY	Sex	Number of Persons in Class	Date of Month	Average	Percent of Total					Median Age	% Women	Median Age
					Probable Age at Arrival	Probable Duration of Stay	Probable Percentage of Total	Selection Average	Sample Average			
His	Boys	677	11/10/11	50.06	0.098	2.22	3.8	64.2	57.45	59.32	61.42	-0.27
Seven	Boys	1708	1/10/11	60.02	0.057	2.88	2.9	53.1	55.7	58.29	60.29	-0.40
Eight	Boys	9095	2/10/11	62.18	0.052	2.85	3.8	52.2	55.6	57.49	60.50	-1.37
Nine	Boys	2180	3/10/11	68.90	0.062	2.51	3.9	61.4	7.2	61.97	64.93	-0.91
Ten	Boys	1907	4/10/11	65.59	0.087	2.72	4.1	50.9	1.09	57.6	63.49	-0.96
Eleven	Boys	1782	5/10/11	67.94	0.063	2.61	8.9	60.2	1.65	57.5	60.97	-0.47
Twelve	Boys	1924	6/10/11	65.76	0.070	2.84	6.9	59.4	1.52	58.65	60.72	-0.44
Thirteen	Boys	1924	7/10/11	70.61	0.080	2.11	4.4	49.4	1.82	57	60.89	-1.61
Fourteen	Boys	924	8/10/11	73.14	0.114	2.44	5.9	49.8	1.66	58	60.21	-1.11
Fifteen	Boys	494	9/10/11	76.84	0.108	2.77	4.9	49.4	2.20	60	61.75	-0.85
Sixteen	Boys	305	10/10/11	79.19	0.199	4.1	5.3	49.4	2.60	58	61.61	-0.84
Seventeen	Boys	305	11/10/11	81.89	0.224	3.16	8.9	49.8	2.17	57	60.80	-0.81
Eighteen	Boys	305	12/10/11	84.87	0.254	2.94	9.3	49.6	3.13	58	60.89	-0.87
Nineteen	Boys	305	1/11/11	86.85	0.284	3.24	9.7	49.3	3.06	58	60.89	-0.87
Twenty	Boys	305	2/11/11	89.10	0.300	3.43	9.3	50.0	3.06	58	60.89	-0.87
Twenty-one	Boys	305	3/11/11	91.85	0.330	3.76	9.4	50.0	3.06	58	60.89	-0.87
Twenty-two	Boys	305	4/11/11	94.60	0.354	4.09	9.4	50.0	3.06	58	60.89	-0.87
Twenty-three	Boys	305	5/11/11	97.35	0.378	4.42	9.4	50.0	3.06	58	60.89	-0.87
Twenty-four	Boys	305	6/11/11	100.10	0.402	4.75	9.4	50.0	3.06	58	60.89	-0.87
Twenty-five	Boys	305	7/11/11	102.85	0.426	5.08	9.4	50.0	3.06	58	60.89	-0.87
Twenty-six	Boys	305	8/11/11	105.60	0.450	5.41	9.4	50.0	3.06	58	60.89	-0.87
Twenty-seven	Boys	305	9/11/11	108.35	0.474	5.74	9.4	50.0	3.06	58	60.89	-0.87
Twenty-eight	Boys	305	10/11/11	111.10	0.498	6.07	9.4	50.0	3.06	58	60.89	-0.87
Twenty-nine	Boys	305	11/11/11	113.85	0.522	6.40	9.4	50.0	3.06	58	60.89	-0.87
Thirty	Boys	305	12/11/11	116.60	0.546	6.73	9.4	50.0	3.06	58	60.89	-0.87
Thirty-one	Boys	305	1/12/11	119.35	0.570	7.06	9.4	50.0	3.06	58	60.89	-0.87
Thirty-two	Boys	305	2/12/11	122.10	0.594	7.39	9.4	50.0	3.06	58	60.89	-0.87
Thirty-three	Boys	305	3/12/11	124.85	0.618	7.72	9.4	50.0	3.06	58	60.89	-0.87
Thirty-four	Boys	305	4/12/11	127.60	0.642	8.05	9.4	50.0	3.06	58	60.89	-0.87
Thirty-five	Boys	305	5/12/11	130.35	0.666	8.38	9.4	50.0	3.06	58	60.89	-0.87
Thirty-six	Boys	305	6/12/11	133.10	0.690	8.71	9.4	50.0	3.06	58	60.89	-0.87
Thirty-seven	Boys	305	7/12/11	135.85	0.714	9.04	9.4	50.0	3.06	58	60.89	-0.87
Thirty-eight	Boys	305	8/12/11	138.60	0.738	9.37	9.4	50.0	3.06	58	60.89	-0.87
Thirty-nine	Boys	305	9/12/11	141.35	0.762	9.70	9.4	50.0	3.06	58	60.89	-0.87
Forty	Boys	305	10/12/11	144.10	0.786	10.03	9.4	50.0	3.06	58	60.89	-0.87
Forty-one	Boys	305	11/12/11	146.85	0.810	10.36	9.4	50.0	3.06	58	60.89	-0.87
Forty-two	Boys	305	12/12/11	149.60	0.834	10.69	9.4	50.0	3.06	58	60.89	-0.87
Forty-three	Boys	305	1/1/12	152.35	0.858	11.02	9.4	50.0	3.06	58	60.89	-0.87
Forty-four	Boys	305	2/1/12	155.10	0.882	11.35	9.4	50.0	3.06	58	60.89	-0.87
Forty-five	Boys	305	3/1/12	157.85	0.906	11.68	9.4	50.0	3.06	58	60.89	-0.87
Forty-six	Boys	305	4/1/12	160.60	0.930	12.01	9.4	50.0	3.06	58	60.89	-0.87
Forty-seven	Boys	305	5/1/12	163.35	0.954	12.34	9.4	50.0	3.06	58	60.89	-0.87
Forty-eight	Boys	305	6/1/12	166.10	0.978	12.67	9.4	50.0	3.06	58	60.89	-0.87
Forty-nine	Boys	305	7/1/12	168.85	1.002	13.00	9.4	50.0	3.06	58	60.89	-0.87
Fifty	Boys	305	8/1/12	171.60	1.026	13.33	9.4	50.0	3.06	58	60.89	-0.87
Fifty-one	Boys	305	9/1/12	174.35	1.050	13.66	9.4	50.0	3.06	58	60.89	-0.87
Fifty-two	Boys	305	10/1/12	177.10	1.074	13.99	9.4	50.0	3.06	58	60.89	-0.87
Fifty-three	Boys	305	11/1/12	179.85	1.098	14.32	9.4	50.0	3.06	58	60.89	-0.87
Fifty-four	Boys	305	12/1/12	182.60	1.122	14.65	9.4	50.0	3.06	58	60.89	-0.87
Fifty-five	Boys	305	1/2/12	185.35	1.146	14.98	9.4	50.0	3.06	58	60.89	-0.87
Fifty-six	Boys	305	2/2/12	188.10	1.170	15.31	9.4	50.0	3.06	58	60.89	-0.87
Fifty-seven	Boys	305	3/2/12	190.85	1.194	15.64	9.4	50.0	3.06	58	60.89	-0.87
Fifty-eight	Boys	305	4/2/12	193.60	1.218	15.97	9.4	50.0	3.06	58	60.89	-0.87
Fifty-nine	Boys	305	5/2/12	196.35	1.242	16.30	9.4	50.0	3.06	58	60.89	-0.87
Sixty	Boys	305	6/2/12	199.10	1.266	16.63	9.4	50.0	3.06	58	60.89	-0.87
Sixty-one	Boys	305	7/2/12	201.85	1.290	16.96	9.4	50.0	3.06	58	60.89	-0.87
Sixty-two	Boys	305	8/2/12	204.60	1.314	17.29	9.4	50.0	3.06	58	60.89	-0.87
Sixty-three	Boys	305	9/2/12	207.35	1.338	17.62	9.4	50.0	3.06	58	60.89	-0.87
Sixty-four	Boys	305	10/2/12	210.10	1.362	17.95	9.4	50.0	3.06	58	60.89	-0.87
Sixty-five	Boys	305	11/2/12	212.85	1.386	18.28	9.4	50.0	3.06	58	60.89	-0.87
Sixty-six	Boys	305	12/2/12	215.60	1.410	18.61	9.4	50.0	3.06	58	60.89	-0.87
Sixty-seven	Boys	305	1/3/12	218.35	1.434	18.94	9.4	50.0	3.06	58	60.89	-0.87
Sixty-eight	Boys	305	2/3/12	221.10	1.458	19.27	9.4	50.0	3.06	58	60.89	-0.87
Sixty-nine	Boys	305	3/3/12	223.85	1.482	19.60	9.4	50.0	3.06	58	60.89	-0.87
Seventy	Boys	305	4/3/12	226.60	1.506	19.93	9.4	50.0	3.06	58	60.89	-0.87
Seventy-one	Boys	305	5/3/12	229.35	1.530	20.26	9.4	50.0	3.06	58	60.89	-0.87
Seventy-two	Boys	305	6/3/12	232.10	1.554	20.59	9.4	50.0	3.06	58	60.89	-0.87
Seventy-three	Boys	305	7/3/12	234.85	1.578	20.92	9.4	50.0	3.06	58	60.89	-0.87
Seventy-four	Boys	305	8/3/12	237.60	1.602	21.25	9.4	50.0	3.06	58	60.89	-0.87
Seventy-five	Boys	305	9/3/12	240.35	1.626	21.58	9.4	50.0	3.06	58	60.89	-0.87
Seventy-six	Boys	305	10/3/12	243.10	1.650	21.91	9.4	50.0	3.06	58	60.89	-0.87
Seventy-seven	Boys	305	11/3/12	245.85	1.674	22.24	9.4	50.0	3.06	58	60.89	-0.87
Seventy-eight	Boys	305	12/3/12	248.60	1.698	22.57	9.4	50.0	3.06	58	60.89	-0.87
Seventy-nine	Boys	305	1/4/12	251.35	1.722	22.90	9.4	50.0	3.06	58	60.89	-0.87
Eighty	Boys	305	2/4/12	254.10	1.746	23.23	9.4	50.0	3.06	58	60.89	-0.87
Eighty-one	Boys	305	3/4/12	256.85	1.770	23.56	9.4	50.0	3.06	58	60.89	-0.87
Eighty-two	Boys	305	4/4/12	259.60	1.794	23.89	9.4	50.0	3.06	58	60.89	-0.87
Eighty-three	Boys	305	5/4/12	262.35	1.818	24.22	9.4	50.0	3.06	58	60.89	-0.87
Eighty-four	Boys	305	6/4/12	265.10	1.842	24.55	9.4	50.0	3.06	58	60.89	-0.87
Eighty-five	Boys	305	7/4/12	267.85	1.866	24.88	9.4	50.0	3.06	58	60.89	-0.87
Eighty-six	Boys	305	8/4/12	270.60	1.890	25.21	9.4	50.0	3.06	58	60.89	-0.87
Eighty-seven	Boys	305	9/4/12	273.35	1.914	25.54	9.4	50.0	3.06	58	60.89	-0.87
Eighty-eight	Boys	305	10/4/12	276.10	1.938	25.87	9.4	50.0	3.06	58	60.89	-0.87
Eighty-nine	Boys	305	11/4/12	278.85	1.962	26.20	9.4	50.0	3.06	58	60.89	-0.87
Ninety	Boys	305	12/4/12	281.60	1.986	26.53	9.4	50.0	3.06	58	60.89	-0.87
Ninety-one	Boys	305	1/5/12	284.35	2.010	26.86	9.4	50.0	3.06	58	60.89	-0.87
Ninety-two	Boys	305	2/5/12	287.10	2.034	27.19	9.4	50.0	3.06	58	60.89	-0.87
Ninety-three	Boys	305	3/5/12	289.85	2.058	27.52	9.4	50.0	3.06	58	60.89	-0.87
Ninety-four	Boys	305	4/5/12	292.60	2.082	27.85	9.4	50.0	3.06	58	60.89	-0.87
Ninety-five	Boys	305	5/5/12	295.35	2.106	28.18	9.4	50.0	3.06	58	60.89	-0.87
Ninety-six	Boys	305	6/5/12	298.10	2.130	28.51	9.4	50.0	3.06	58	60.89	-0.87
Ninety-seven	Boys	305	7/5/12	300.85	2.154	28.84	9.4	50.0	3.06	58	60.89	-0.87
Ninety-eight	Boys	305	8/5/12	303.60	2.178	29.17	9.4	50.0	3.06	58	60.89	-0.87
Ninety-nine	Boys	305	9/5/12	306.35	2.202	29.50	9.4	50.0	3.06	58	60.89	-0.87
Hundred	Boys	305	10/5/12	309.10	2.226	29.83	9.4	50.0	3.06	58	60.89	-0.87
Hundred and one	Boys	305	11/5/12	311.85	2.250	30.16	9.4	50.0	3.06	58	60.89	-0.87
Hundred and two	Boys	305	12/5/12	314.60	2.274	30.49	9.4	50.0	3.06	58	60.89	-0.87
Hundred and three	Boys	305	1/6/12	317.35	2.298	30.82	9.4	50.0	3.06	58	60.89	-0.87
Hundred and four	Boys	305	2/6/12	320.10	2.322	31.15	9.4	50.0	3.06	58	60.89	-0.87
Hundred and five	Boys	305	3/6/12	322.85	2.346	31.48	9.4	50.0	3.06	58	60.89	-0.87
Hundred and six	Boys	305	4/6/12	325.60	2.370	31.81	9.4	50.0	3.			

* Integrated by adding the name of the group to the caption of the chart.

with out of the sector, and therefore higher long-run wages (the larger, more sensitive and more physically taxed utility

to overexertion. This prolonged overexertion causes, as every physician knows by repeated observations, such harm as a long life can not efface. The teacher should recognize the physical basis of precocity and dullness. The superin-

a clearly defined degree of mental work. When great numbers are considered, this system is practically absolute in its infallibility. Those children below the mean should be under almost paternal solicitude. Those below the twenty-

five percentile grade should certainly be under the supervision of a properly experienced physician. This would practically place all children in school under a physician's care, because each would be advanced only after a physical examination by him.

But the study of child growth does not stop with physical measurements. The good work of Clark University has furnished simple and effective means of measuring sensibility, reflex irritability, memory, and fatigue. The basis for comparison is, to be sure, not yet at hand, but with the stimulus and propaganda of such congresses as that lately held under the auspices of Professor William O. Krohn, of

the University of Illinois, this want will soon be supplied. There will then be no such thing as a stereotyped course of study for all children in a great city, and even the order of exercises and the length of sessions will be the legitimate subject of questions to be answered by experiment alone.

In order to give a wider circulation among medical men, eight tables are copied from Porter's monograph, and also a few references to the more accessible literature mentioned in his bibliography.

Bibliography.

Baxter, J. H. *Medical Statistics in the Prorost Marshal General's Bureau*, 1875, vol. i.

Bertillon, A. *Les proportions du corps humain. Réne seantifique*, Paris, 1889, vol. xlii, No. 17, pp. 524-529.

Beyer, H. G. *Observations on Normal Growth and Development of the Human Body under Systematized Exercise*, Report of the Chief of the Bureau of Medicine and Surgery

to the Secretary of the Army, Washington, 1892, pp. 141-160.

Boam, F. *The Growth of Children*, *Science*, vol. xiv, No. 483, pp. 256, 257, May 6, 1892, and No. 485, pp. 281, 282, May 20th.

TABLE VI
THE LENGTH OF HEAD.

AGE AT NEAREST BIRTHDAY.	Sex.	Number of observations.	Unit of Measurement.	Average.	Probable Error of Average.	Probable Unit.	Relation of Probable Deviation to Average.	Standard Deviation.	Standard Error.	Relative Increase of Average.	25 Percentile Grade.	Median or 50 Percentile Grade.	75 Percentile Grade.	Median Below Average.
Six.....	Boys.	606	Milli.	178.39	0.171	4.21	2.36	16.4	0.97	0.08	174.63	178.86	183.79	+0.47
	Girls.	606		173.45	0.170	4.20	2.42	16.1	0.97	0.08	170.19	174.34	179.14	+0.90
Seven.....	Boys.	1498		178.54	0.118	4.52	2.56	15.7	0.15	0.08	174.84	179.92	183.79	+0.38
	Girls.	1511		174.09	0.108	4.32	2.42	15.4	0.14	0.08	171.41	175.58	179.76	+0.49
Eight.....	Boys.	2079		178.62	0.106	4.45	2.70	15.1	0.08	0.08	176.03	180.44	184.87	+0.82
	Girls.	2125		175.18	0.092	4.26	2.43	14.4	0.09	0.08	172.17	176.41	180.82	+0.73
Nine.....	Boys.	1806		180.73	0.109	4.87	2.69	14.5	0.10	0.08	176.71	181.00	185.69	+0.28
	Girls.	1884		176.39	0.101	4.59	2.48	14.3	0.10	0.08	173.89	177.80	181.68	+1.41
Ten.....	Boys.	1912		181.45	0.094	4.13	2.28	14.1	0.73	0.08	178.55	182.86	187.26	+0.49
	Girls.	1790		177.24	0.102	4.33	2.44	13.8	0.85	0.08	174.16	178.51	182.87	+0.06
Eleven.....	Boys.	1654		182.87	0.129	5.26	2.89	13.6	0.92	0.08	178.55	182.86	187.26	+0.49
	Girls.	1560		179.08	0.119	4.70	2.64	13.4	0.84	0.08	174.71	179.70	183.78	+1.67
Twelve.....	Boys.	1576		182.84	0.115	4.56	2.49	13.2	0.37	0.26	180.73	185.04	189.32	+0.24
	Girls.	1510		179.50	0.114	4.46	2.49	12.9	1.42	0.26	176.43	180.73	185.04	+0.24
Thirteen.....	Boys.	1307		183.84	0.131	4.55	2.48	12.9	1.00	0.55	179.38	184.21	188.78	-0.37
	Girls.	1187		181.44	0.101	4.59	2.51	12.4	1.94	1.08	178.25	182.48	187.05	+1.04
Fourteen.....	Boys.	890		186.94	0.182	4.64	2.91	12.6	3.09	1.68	182.08	186.23	190.75	-0.69
	Girls.	1007		181.41	0.143	4.63	2.47	12.7	1.87	1.09	180.07	184.71	189.75	+1.29
Fifteen.....	Boys.	605		187.01	0.208	4.66	2.49	12.1	0.08	0.61	183.01	187.69	191.97	-0.58
	Girls.	649		182.12	0.182	4.63	2.47	12.1	0.21	0.61	181.55	185.67	190.00	+0.55
Sixteen.....	Boys.	191		189.06	0.355	4.93	2.61	11.8	0.25	1.10	184.70	190.04	194.77	-0.98
	Girls.	45		186.84	0.286	5.12	2.74	12.1	1.72	0.93	183.02	187.70	192.46	+0.86
Seventeen.....	Boys.	221		189.45	0.575	4.08	2.68	11.5	0.39	0.21	185.58	190.93	196.17	-1.43
	Girls.	82		187.37	0.575	4.08	2.74	11.5	0.39	0.21	184.70	189.75	194.77	+0.46
Eighteen.....	Boys.	82		193.91	0.717	4.13	2.18	11.4	4.46	2.35	188.75	193.91	199.06	-0.16
	Girls.	161		187.37	0.282	3.20	1.76	11.9			184.75	189.41	194.06	+0.44
Nineteen.....	Girls.	77		187.91	0.465	4.09	2.18	11.8			184.36	189.21	194.75	+0.40
Twenty.....	Girls.	75		187.81	0.433	3.76	2.01	11.7			188.08			+0.27
Twenty-one.....	Girls.													

TABLE VII.
THE WIDTH OF HEAD.

AGE AT NEAREST BIRTHDAY.	Sex.	Number of observations.	Unit of Measurement.	Average.	Probable Error of Average.	Probable Unit.	Relation of Probable Deviation to Average.	Standard Deviation.	Standard Error.	Relative Increase of Average.	25 Percentile Grade.	Median or 50 Percentile Grade.	75 Percentile Grade.	Median Below Average.	Width Length Index.
Six.....	Boys.	573	Milli.	143.29	0.118	2.82	1.97	13.2	0.97	0.08	140.77	143.76	147.11	+0.47	0.80
	Girls.	573		138.22	0.154	3.01	2.72	13.0	0.97	0.08	137.21	140.88	144.54	+0.94	0.81
Seven.....	Boys.	1571		144.37	0.090	3.58	2.18	12.7	1.08	0.75	141.57	144.98	148.26	+0.61	0.81
	Girls.	1514		141.4	0.090	3.58	2.73	12.5	1.14	0.81	138.63	142.10	145.41	+0.76	0.81
Eight.....	Boys.	1909		145.30	0.082	3.68	2.53	12.2	0.93	0.64	142.37	145.63	149.43	+0.33	0.81
	Girls.	1902		143.87	0.081	3.71	2.53	12.0	0.91	0.64	140.50	143.81	147.11	+0.50	0.81
Nine.....	Boys.	1862		146.23	0.090	3.85	2.75	11.9	0.77	0.57	143.79	146.98	150.05	+0.21	0.81
	Girls.	1827		143.74	0.093	4.00	2.75	11.7	0.91	0.57	140.81	144.58	148.26	+0.50	0.81
Ten.....	Boys.	1661		147.29	0.095	3.76	2.55	11.6	0.70	0.49	144.30	147.51	150.72	+0.22	0.81
	Girls.	1604		144.8	0.095	3.76	2.72	11.6	0.70	0.49	141.50	144.81	148.12	+0.79	0.81
Eleven.....	Boys.	1431		147.98	0.092	3.80	2.72	11.6	0.70	0.49	144.66	147.99	151.32	+0.31	0.81
	Girls.	1373		145.13	0.105	4.01	2.72	11.5	0.90	0.49	142.00	145.31	148.62	+0.81	0.81
Twelve.....	Boys.	1175		148.73	0.111	3.90	2.62	11.5	0.75	0.51	145.46	148.81	152.08	+0.22	0.81
	Girls.	1147		145.73	0.111	3.90	2.62	11.5	0.75	0.51	142.78	146.09	149.40	+0.72	0.81
Thirteen.....	Boys.	873		149.50	0.129	3.82	2.56	11.5	0.77	0.52	146.04	149.04	152.08	+0.51	0.80
	Girls.	829		146.93	0.136	4.03	2.63	11.3	0.87	0.52	143.79	147.11	150.41	+0.78	0.80
Fourteen.....	Boys.	629		150.78	0.146	4.14	2.71	11.3	0.89	0.50	147.51	150.41	153.31	+0.26	0.80
	Girls.	575		147.98	0.149	4.24	2.71	11.3	0.89	0.50	145.17	148.21	151.25	+0.73	0.80
Fifteen.....	Boys.	475		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	421		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80
Sixteen.....	Boys.	33		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	33		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80
Seventeen.....	Boys.	33		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	33		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80
Eighteen.....	Boys.	33		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	33		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80
Nineteen.....	Boys.	33		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	33		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80
Twenty.....	Boys.	33		151.09	0.156	4.21	2.77	11.3	0.91	0.51	148.21	151.09	153.99	+0.27	0.80
	Girls.	33		148.08	0.156	4.21	2.77	11.3	0.91	0.51	145.17	148.08	150.99	+0.73	0.80

growth is not the possibility of harm. Anthropometry is not a science, but a fact that is below the mean of his age. It separates every child into two classes: those physically competent and those physically incompetent for

Boulton. Some Anthropometrical Observations. *British Medical Journal*, March 4, 1876, pp. 280, 282.

Bowditch, H. P. The Growth of Children. *Eighth Annual Report of the State Board of Health of Massachusetts*, Boston, 1877; *Tenth Report*, pp. 33-62; *Twenty-first Report*, pp. 287-304; *Twenty-second Report*, pp. 479-522.

Duffner, F. Ueber grosse Gewicht, Kopf und Brustumfang beim mannlichen Individuum vom 13. bis 22. Lebensjahre, nebst vergleichender Angabe einiger Kopfmasse. *Archiv für Anthropologie*, Braunschweig, Bd. xv, 1885. Supplement, S. 121, 126.

Fergus, W., and Rodwell, G. F. On a Series of Measurements for Statistical Purposes, recently made at Marlborough College. *Journal of the Anthropological Institute of Great Britain and Ireland*, London, May 17, 1874, pp. 126-130.

Galton, F. On the Height and Weight of Boys aged Fourteen in Town and Country Public Schools. *Journal of the Anthropological Institute of Great Britain and Ireland*, vol. v, 1876, pp. 174-180.

Galton, F. *Natural Inheritance*, London, 1889.

Greenwood, J. M. Heights and Weights of Children. *Twentieth Annual Report of the Board of Education of the Kansas City Public Schools*, 1890-91, pp. 48-56.

Hitebrook, E. Comparative Study of Measurements of Male and Female Students at Amherst, Mt. Holyoke, and Wellesley Colleges. *Physique*, London, 1891, vol. i, pp. 50-94.

TABLE VIII.

THE HEIGHT OF FACE FROM HAIR-LINE TO POINT OF CHIN.

AGE AT NEAREST BIRTHDAY	SEX	NUMBER OF INDIVIDUALS	MEAN MEASURE	AVERAGE	Probable Error of Average	Probable Deviation	Ratio of Deviation to Average	Relation of Age to Height	Absolute Annual Increase of Age	Relative Annual Increase of Age	Median Age	Median Measure	Median Error
Sex	Boys	611	162.65	0.809	5.18	8.4	14.0				148.54	153.02	-0.34
	Girls	509	156.14	0.258	5.88	8.9	14.0				144.65	150.45	-0.39
Age	Boys	1621	164.57	0.159	6.40	4.1	13.6	1.89	1.40	150.15	155.33	160.40	-0.76
	Girls	1485	158.55	0.145	5.75	3.4	13.6	2.00	1.45	148.75	154.13	159.32	-0.82
Eight	Boys	2012	167.50	0.132	6.46	3.5	13.2	2.88	1.86	158.04	163.04	168.10	-0.24
	Girls	1965	165.13	0.119	5.27	3.4	13.1	1.95	1.19	161.65	165.60	169.11	-0.41
Nine	Boys	1997	169.43	0.127	5.67	3.6	12.8	1.93	1.32	164.45	169.25	173.62	-0.82
	Girls	1980	167.13	0.151	5.56	3.4	12.9	2.05	1.45	162.31	167.70	172.40	-0.65
Ten	Boys	1909	161.37	0.127	5.55	3.4	12.5	1.94	1.24	166.47	171.70	176.38	-0.83
	Girls	1863	160.44	0.141	5.82	3.5	12.5	2.00	1.50	165.36	169.55	174.15	-0.52
Eleven	Boys	1863	163.39	0.148	5.90	3.5	12.2	2.00	1.35	169.67	174.11	178.45	-0.72
	Girls	1807	160.81	0.161	5.75	3.5	12.2	2.01	1.37	167.56	172.00	176.50	-0.65
Twelve	Boys	1777	166.28	0.137	5.44	3.3	11.9	1.94	1.22	160.37	165.62	171.54	-0.39
	Girls	1721	165.23	0.144	5.76	3.5	11.9	1.74	1.49	160.27	165.95	171.40	-0.38
Thirteen	Boys	1211	167.92	0.173	6.01	3.6	11.7	1.89	1.30	162.59	168.16	173.87	-0.51
	Girls	1186	165.35	0.171	5.94	3.6	11.4	1.96	1.46	163.18	169.32	174.82	-0.90
Fourteen	Boys	806	170.49	0.238	7.05	4.1	11.5	1.87	1.17	165.01	171.04	177.42	-0.55
	Girls	788	167.88	0.211	6.46	3.5	11.4	1.83	1.40	163.60	170.00	175.80	-0.82
Fifteen	Boys	482	174.80	0.292	6.41	3.7	11.3	1.81	1.15	168.74	175.08	181.28	-0.78
	Girls	454	171.25	0.211	6.46	3.5	11.2	1.97	1.65	168.65	175.80	180.81	-0.32
Sixteen	Boys	193	178.19	0.425	6.90	3.8	11.1	1.88	1.15	172.76	177.93	184.22	-0.26
	Girls	185	176.78	0.296	6.60	3.7	11.3	1.80	1.19	171.37	176.81	183.09	-0.39
Seventeen	Boys	70	182.28	0.863	7.60	4.2	11.0	1.89	1.11	182.25			-0.03
	Girls	68	179.75	0.77	7.09	3.9	11.0	1.86	1.16	179.43			-0.03
Eighteen	Boys	33	183.67	0.139	8.60	4.4	10.8	1.90	1.10	183.66			-1.90
	Girls	138	180.25	0.149	6.13	3.4	11.4	2.46	1.24	176.82	181.39	186.81	-1.89
Nineteen	Boys	23	189.93	0.549	9.72	5.4	11.4	0.96	0.82	174.79	180.68	186.75	-1.63
	Girls	22	173.49	0.503	4.75	2.7	11.2			174.80	179.00	184.35	-0.09
Twenty-one	Boys	13	193.88	0.764	4.59	2.8					181.75		-1.76

Munoz, O. S. Human Growth. *British Medical and Surgical Journal*, July 22, 1881.

Puckham, G. W. The Growth of Children. *South Annual Report of the State Board of Health of Wisconsin*, 1881. Madison, pp. 2-10.

Payne, W. L. *Elements of the Physical Basis of Hygiene*, and *Practical Treatise of the Teaching of Science*, 54, London, and N. Y., 1881, pp. 161-161.

Payne, W. L. *Manual of Hygiene*, 1881, pp. 11-12.

Payne, W. L. *The Science of Hygiene*, 1881, pp. 11-12.

Payne, W. L. *Notes on the Development and Growth of the Human Body*, 1881, pp. 11-12.

Stevenson, William. On the Relation of Weight to Height and the Rate of Growth in Man. *Lancet*, London, September 22, 1888, pp. 560, 564.

West, G. M. The Growth and Breadth of the Face. *Science*, New York, 1891, No. 18, pp. 10, 11.

West, G. M. Worcester School Children—The Growth of the Body, Head, and Face. *Science*, vol. xxi, No. 518, January 6, 1893, pp. 2-4.

OPHTHALMIC SUGGESTIONS FOR THE GENERAL PRACTITIONER.*

By RICHARD KALISH, A. M., M. D.,

CONSULTING OPHTHALMIC SURGEON TO THE ST. JOHN'S HOSPITAL,

TORONTO, CANADA, AND
ONE OF THE OPHTHALMIC SURGEONS TO THE ST. JAMES' HOSPITAL,
SENIOR SURGEON OF THE NEW YORK ACADEMY OF MEDICINE,
RECENTLY PRESIDENT OF THE SOCIETY OF THE ALLIANCE OF HOSPITAL HOSPITAL,
MEMBER OF THE NEW YORK COUNTY MEDICAL SOCIETY, 1890.

IX this paper, Mr. Chairman, I propose to group together the symptoms which serve as a basis for distinction between the common forms of eye troubles such as often come to the notice of the general practitioner before the patients present themselves to the oculist.

Ophthalmia Neonatorum and Ophthalmia Simplex.—

The discrimination between ophthalmia of the newborn, a disease fraught with peril to the integrity of the eye, and acute or simple ophthalmia, a comparatively innocuous disease, rarely presents difficulty, provided certain diagnostic points are borne in mind.

Ophthalmia neonatorum usually comes on within three days after birth, but when due to infection from soiled fingers, clothes, or sponges it may be delayed for several weeks. Clinical observation has demonstrated that there are two varieties of this greatly dreaded disease—the one, a mild form which tends to recover, not supported with a special micro-organism, and a severe form, increasing in intensity, which invades and produces necrosis of the cornea, often with destruction of the eyeball. This variety is provided with a micro-organism, the gonococcus of Neisser. One authority states that the disease usually occurs frequently in boys; my records would show the reverse to be the case, but it would seem to require the exercise of a very active and vivid imagination to attempt to establish a relation between the sex of a child and the occurrence of gonorrhea in the father of the mother. The onset of the disease is progressive with suddenness. A telling difference in the course of the one and a slight nodding of the

* Read before the Society of Young Oculists, England, London, 1893.

the conjunctiva are speedily followed by great swelling of the lids, with chemosis of the conjunctiva, pain, and a discharge which becomes profuse and very soon changes to a yellow or greenish-yellow pus. The ocular conjunctiva, on separating the lids, will be found to be greatly congested, and later often the seat of hæmorrhages. Deep infiltration supervenes on this, the swollen ocular conjunctiva forming a hard rim elevated above the cornea, which is seen bathed in pus at the bottom of a cup-shaped pit. Damage to the integrity of the eye usually occurs at this time, for this condition produces a strangulation of the nutrient vessels of the cornea, and coincidently promotes direct infection by the discharge; then larger or smaller ulcers form near the limbus usually, sometimes at the center of the cornea, which heal either by a reparative process or go on to perforation, with loss of aqueous humor, projection forward of the lens, adhesion or prolapse of the iris, and damage to the eye, resulting in a dense white opacity of the cornea or going on to a rapid destruction of the globe by panophthalmitis, or the more gradual shrinkage of the tissues in atrophy of the bulb.

Acute ophthalmia presents a different picture. The secretion is at first thin and watery; the edges of the lids may become œdematous; the conjunctival congestion extends but part way toward the cornea, being most intense at the conjunctival reflection, and becoming less pronounced as it proceeds toward the limbus. Only in extreme cases does the conjunctiva assume the velvety appearance observed in neonatorum. The secretion soon becomes mucopurulent or simply mucoid, depending upon the grade of inflammation, and either gathers at the commissural angles or, if more profuse, mats the eyelashes, and drying seals the eyelids together. Grouping the symptoms in parallel columns, we find—

OPHTHALMIA NEONATORUM.

Is caused by the introduction of infectious materials from the genito-urinary passages of the mother, or is started from careless bathing of the child after birth. Soiled sponges, clothes, or soiled hands conveying virulent lochial discharge may be responsible for an attack. Infection is likely to be often observed to follow retarded labor, and may occur in face presentations.

Except in very mild cases the process of Neisser is present.

Seen to be more common during the summer months.

OPHTHALMIA SIMPLEX.

Most frequently found during changeable weather, but it may arise from irritant substances in the air reaching the eyes, as dust or tobacco smoke.

Only in very severe cases is a micro-organism demonstrable. If only one eye be affected, and the discharge be very profuse, the cause is undoubtedly an as yet undetermined micro-organism.

May occur at any time, but is perhaps more fre-

quently observed in the spring and autumn months.

Commonly begins about three days, but has been seen within eighteen hours after birth, and it may not appear for several weeks.

Often begins in one eye and spreads by contagion to the other; but the unaffected eye escapes if early sealed by a shield consisting of a watch glass fitted into a perforation in a square piece of rubber plaster, which is carefully applied to the brow, side of the nose, and lower margin of the orbit, leaving the temporal side free for ventilation.

Conjunctiva is at first slightly reddened and a small discharge is perceived at the angles, which discharge rapidly changes to a yellow or greenish-yellow pus, sometimes remaining pent up in the conjunctival *cul-de-sac*.

Congestion of the conjunctiva is coincident with the infiltration and elevation of the hardened conjunctival rim surrounding the pit at the bottom of which the cornea may be seen.

Lids swell up rapidly and become hot, tense, and red.

Milder form usually goes on to recovery without damage to the eye, but in the severe form, even under the most judicious treatment, the eyeball may be destroyed, although at times careful and unremitting treatment will produce a most satisfactory result.

quently observed in the spring and autumn months.

May begin at any time.

Generally begins in one eye and spreads to the other, even though the unaffected eye be sealed from possible contagion.

Conjunctival congestion varies in degree, almost never assuming the velvety appearance seen in ophthalmia neonatorum, but is made up of dilated and tortuous vessels, the redness increasing as we approach the lids and decreasing as we near the cornea. The tarsal conjunctiva and the retro-tarsal and semilunar folds are affected; rarely does the congestion involve much of the ocular conjunctiva.

The discharge rarely appears until the second day, and then it is watery; after another twenty-four hours it becomes mucopurulent or mucoid.

Lids rarely swell up, except as a result of injudicious treatment, the result of "meddlesome domestic medication."

Under proper treatment this goes on to complete recovery.

Hordeolum and Chalazion.—The discrimination between hordeolum or styne and chalazion or Meibomian cyst, sometimes called tarsal tumor, should present no difficulty, and yet errors in diagnosis are by no means uncommon. A styne is a small furuncle on the margin of the lid, and is the supuration of a gland or of the cellular tissue subjacent to the gland, having its seat usually in the vicinage of the hair follicles. A chalazion, on the other hand, is a cyst due to chronic inflammation of a Meibomian gland and of the tissue surrounding it. It begins by a retention of the Meibomian secretion, due generally to a plugging up of the duct, and is situated deep in the tarsal tissue. Its growth is slow, and it is usually firm in its attachment to the tarsus, the skin being freely movable over it. When hordeolum or chalazion shows a tendency toward recurrence the probable cause is an ametropic eye, which demands for its relief properly fitting glasses. In parallel columns we differentiate between these troubles as follows:

HORDEOLUM.

CHALAZION.

Onset sudden, although there may be a period of one day's lid irritation as a prodrome.

Lids hot, red, tender, and painful.

Situated at the margin of the lid.

Skin is usually tense over the swelling.

Speedily shows a yellow cap and points in the edge of the lid, often surrounding an eyelash.

Growth is very gradual.

No heat, redness, or pain.

Situated on the tarsus, at some distance from the edge of the lid.

Skin freely movable over the swelling.

Rarely points, and when it does so, the prominence is near the center of the lid.

Keratitis, Iritis, and Glaucoma.—The greatest difficulty in diagnosing ophthalmic diseases arises in distinguishing between keratitis, iritis, and glaucoma.

An injection at the limbus of fine, straight, and immovable vessels, but which can be emptied by pressure, with or without the dilated and tortuous vessels of the conjunctiva (conjunctivitis), limited to one side, usually indicates the presence of a foreign body on, or an inflammatory process of, that side of the cornea. Central keratitis is accompanied by circumferential injection extending over the sclera for a short distance only; its color is pinkish, and close examination shows this to be due to the presence of very fine and straight vessels. Further examination reveals a phlyctenular, ulcer, etc., which demonstrates the existence of corneal inflammation, the conjunctival symptoms of which include blepharospasm, photophobia, excessive lacrimation, tension of vision, and pain. In iritis we usually have a train of symptoms which are almost pathognomonic. There is early occurrence and in the globe a ciliary congestion soon extending to the limbus of the iris, especially those 3 or 4 mm. to the forehead, temples, and jaw, sometimes showing a hemimeridia. The pain is always most severe at night, often presenting sleep, and diminishing in intensity in the

morning. Impairment of sight, intolerance of light, and lachrymation are in direct proportion to the severity of the attack. The objective symptoms are circumferential injection, forming the "iritic corona," some conjunctival injection, a partly contracted pupil only slightly responsive to light stimulus and to mydriatics, its edge dull and thickened; the surface of the iris is muddy and soggy, having lost its natural brilliancy and changed its color, a blue iris becoming a dull gray and a hazel changing to a dirty brown. Local swellings from exudates produce irregularities on the surface of the iris; the cornea becomes steamy and the aqueous more or less turbid. Later there are attachments between the iris and the anterior capsule of the lens, which can be readily detected by using a mydriatic, and which are decisive indications of iritis. When tenderness of the eyeball occurs it suggests inflammation of the ciliary body.

Whenever possible glaucoma should be recognized at its very inception, for its result, total and irremediable blindness, makes it at once the most serious as well as the greatest feared of ophthalmic troubles, whereas its timely treatment will often yield most favorable results.

It sometimes comes on in an extremely insidious fashion, there being a varying prodromal period. Rapid increase in presbyopia, causing very frequent change in glasses for reading; iridescent vision, consisting of a halo around lights, the outer ring being red and the inner one bluish green, with increased tension of the eyeball, form a tripod of symptoms upon which rests the diagnosis of this dangerous malady. These symptoms become intensified; the cornea becomes steamy, like glass that has been breathed upon; the anterior chamber becomes shallow, and the pupil partly or fully dilated and sluggish to light stimulation, while the increased tension of the globe becomes more pronounced, often reaching a stony hardness. The acute form is characterized by intolerable pain in the ball the tension is markedly increased, reaching up to $+2$ or $+3$; the eyelids are swollen; there is a marked conjunctivitis; the cornea is anæsthetic and steamy, the aqueous is turbid, and the iris often is discolored; the pupil is irresponsive and partly or fully dilated. The other symptoms are found within the eyeball, can only be determined by using the ophthalmoscope, and consequently have no place in this paper. An attack may eventuate in blindness, or the symptoms may pass away, leaving only a slightly increased tension and moderate impairment of the movements of the iris. Succeeding attacks occur at irregular intervals, and in unoperated cases blindness is the final result. The eyelids greatly and acutely assume the conjunctival vessels coarsely injected, sclera discolored, cornea opaque or the cornea so atrophic, low, concave, and pushed forward, and the globe of many become covered by dense granulations at the base of the eyelids and the formation of granular matter on the surface of the globe.

Collating the symptoms of keratitis, iritis, and glaucoma, we find that they can be arranged in parallel columns as follows, and for purposes of comparison the symptoms of conjunctivitis are separately treated for these are also placed in a column:

CONJUNCTIVITIS.	KERATITIS.	IRITIS.	GLAUCOMA.
A feeling as if a foreign body were in the eye.	General irritation, variable in degree.	Severe pain in the globe passing into trigeminal neuralgia.	In severe cases, pain in the globe.
Enlarged and tortuous vessels.	Diffuse congestion of conjunctival vessels and pericorneal injection.	Circumcorneal injection.	
Photophobia absent except in severe cases.	Considerable photophobia and blepharospasm.	Photophobia rarely severe.	No photophobia.
Conjunctiva swollen, sometimes chemotic.	Conjunctiva clear, but in severe cases may be chemotic.	Conjunctiva clear, but it may be bathed in tears.	Only in the severe form is the conjunctiva congested.
No special tenderness of the eyeball.	No special tenderness of the eyeball.	Pressure shows some tenderness of the eyeball.	No special tenderness of the eyeball.
Muco-purulent discharge.	More or less lacrymation.	No discharge; but there is increased lacrymation.	Sometimes an increase in the lacrymation.
Pupil unaffected.	Except other structures be involved the pupil is unaffected.	Pupil sluggish and immobile.	Pupil partly or fully dilated, slightly responsive to light. Late in the case the pupil assumes a greenish hue, the anterior chamber being shallowed or entirely abolished.
A mydriatic acts normally.	A mydriatic acts normally.	The reaction to a mydriatic is slow and abnormal.	A mydriatic should never be used.
Iris unchanged in color.	Iris unchanged in color.	Iris more or less changed in color, a blue iris becoming gray and a hazel changing to a dirty brown.	Late in the case the iris is markedly discolored, and may be atrophied.
No synechia.	No synechia.	There may be posterior synechia.	No synechia.

As the deservedly high position held by conservatism in the practice of medicine and surgery is due largely to the observance of what *not* to do in the treatment of disease or injury, this brief paper will be brought to a close by giving the "don'ts" in the treatment of ophthalmic troubles.

Don't poultice an eye under any circumstances whatever. Binding a wet application over an eye for several hours must damage that eye, the assertions of those professing to have personal experience in this to the contrary notwithstanding. The failure to aggravate an existing trouble by binding a moist application over an inflamed eye, which application is supposed to remain for an entire night, can only be explained by the supposition that a guardian angel has watched over that misguided case, and has displaced the poultice before it had got in its fine work. All oculists condemn the poultice absolutely, in every shape and in every form. Tea leaves, bread and milk, raw oysters, scraped beef, scraped raw turnip or raw potato, and the multitude of disgusting domestic remedies popularly recommended are, one and all, capable of producing irreparable damage to the integrity of the tissues of the visual organ.

Don't forget in the examination of an eye that the vascularity of the eyeball may furnish valuable information. Large tortuous, anastomosing, beaded vessels, forming a network freely movable, indicating in later stages, we ap-

proach the eyelids and diminishing as we approach the cornea, are indicative of conjunctival inflammation. A rose colored belt around the cornea, diminishing as the eyelids are approached, formed of fine straight vessels, radiating in a parallel direction, designate an inflammation of the cornea, iris, ciliary body, or chorioid. This is what is commonly called the circumcorneal zone or the iritic corona, the vessels being mainly venous and situated in the episcleral tissue. Then there is an irregular patch of congestion on the sclerotic, a livid red or bluish red, indicating episcleritis or scleritis.

Don't allow a nurse to wash out the eyes of patients with ophthalmia neonatorum or gonorrhoeal ophthalmia until you have shown how this should be done.

Don't press upon the eyeball, but *upon the edge of the brow*, in separating the eyelids, in any case of corneal ulceration occurring in the course of keratitis, ophthalmia neonatorum, or gonorrhoeal ophthalmia, as such pressure can easily cause a perforation of the cornea, extrusion of the lens, and sometimes loss of a considerable quantity of the vitreous humor.

Don't forget that incised or perforating wounds in the ciliary region are most dangerous, and often call for the enucleation of the injured eye to prevent the development of sympathetic ophthalmia in and loss of the sound eye.

Don't prescribe for an inflamed eye until you have tried the tension of the balls, searched for a foreign body caught

under the lids or lodged on the cornea, and examined to see if there is any implication of the iris or cornea.

Don't use lotions containing lead water in any case with abrasion of the corneal epithelium, as particles of carbonate or oxide of lead become deposited at the site of these abrasions and produce irremovable opacities.

Don't use alum lotion in any case with abrasion of the cornea, as it has the power to dissolve the cement of the cornea, and to provoke a deep and dangerous ulcer.

Don't use eserine or pilocarpine in an eye that is the seat of an iritis, and don't use a solution of eserine in any usual case stronger than from half a grain to a grain to the ounce. Stronger solutions have set up attacks of trouble some iritis.

Don't use atropine without testing the tension of the globe, and without proper care as to the strength of the solution employed in the old and the very young.

50 WEST THIRTY-SIXTH STREET.

THE DIETETIC AND HYGIENIC TREATMENT OF CONSUMPTION.

By T. J. MCGILLICUDDY, A.M., M.D.,

SURGEON TO THE NEW YORK MOTHER'S HOME MATERNITY HOSPITAL,
CONSULTING PHYSICIAN TO THE ITALIAN HOSPITAL,
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE,
FELLOW OF THE NEW YORK STATE MEDICAL ASSOCIATION;
MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.

About nine years ago I first became thoroughly convinced of the great value in certain chronic diseases of dietetic treatment. Before that time I was, like many others, too credulous as to the power of drugs alone as curative agents in all diseased conditions. The good results so fondly hoped for and expected from that line of treatment did not always appear, and the results were often discouraging and dissatisfying. In the ordinary text-books no special stress was laid upon the value of dietetic methods except in diabetes and a few other conditions. At that time I had a patient in whom I was especially interested.

He was thirty years of age, and had been a splendid type of physician, mouth, an athlete, and a genial companion. As a result of boarding-house cooking, however, he had become fully emaciated and already presented the physical signs of consolidation at the apex of the left lung. Added to these was a slight hacking cough. Three prominent professors to whom I took him made the diagnosis of phthisis, and gave a very gloomy prognosis. The drugs prescribed by them had no beneficial effect. Dr. George B. Foster then saw him, and gave a favorable prognosis. Along with sensible medical treatment he recommended a temperate diet of hot water, carefully prepared, cooked food, and stale wheat bread. The patient's expectation was immediately checked, and he began to gain strength. Other bottles of food, which were both nutritious and easily digested, were gradually added to his diet, and after following this line of treatment for a few months he made a complete recovery. At this time he readily absorbed and excreted water in marked contrast with his former pitiable condition.

The necessity of that patient under dietetic treatment made a great impression upon me, and served to direct my attention at once to the study of dietetics in disease. At

that time there was seemingly considerable prejudice, as well as lack of knowledge, among the members of the profession with whom I conversed, as to the value of the dietetic treatment of phthisis. The dangers of a diet of beef were harped upon as if nothing else caused indigestion.

To understand how to treat consumption from a dietetic standpoint, we must first consider what consumption really is. Consumption is a disease of malnutrition in which a change has taken place in the chyle or in the mesenteric glands, thus leading to a want of vital matter in the constitution. This is usually the result of bad food, impure air, and an irrational mode of living. The lung structure may be still further weakened by inflammatory or other causes. In acute cases there is often a preceding catarrhal pneumonia. Consumption develops most commonly in strumous or scrofulous subjects—struma being an exhausted constitutional state, and it is simply another name for starvation and bad hygiene.

The rôle which the tubercle bacilli play in phthisis is a secondary one; there must first be a weakening of the constitution. Although I have seen apparently healthy children born of tuberculous parents, they are far more often tuberculous, showing an hereditary constitutional vice.

Tubercular consumption is not a local but a constitutional disease, and calls for general treatment. Tubercle bacilli do not and can not cause consumption in a perfectly healthy individual. They only induce disease in persons with lowered vitality, who thus become susceptible to their influence. This vulnerability is generally induced by wrong living, poor food, bad personal hygiene, and causes which lead to exhaustion of the nervous system. Bacterial germs may be found latent in some of the tissues of the body. In consumption they can not develop in the tissues of the lung until there are a weakening and decay of its substance. They live and multiply only in diseased tissues.

When fermentation occurs during the process of digestion different bacteria develop quickly, and in many cases are absorbed into the lymphatics and blood, causing a catarrhal state, and this is probably the first factor in phthisis. Practically, "a tendency to consumption" means that there is a kind of starvation of the system, and this condition is best relieved by attention to diet and personal hygiene.

Consumption is the great destroyer. It causes thousands of deaths every year in this city alone, and therefore any improvement that can be made in its treatment ought certainly to be welcomed. The disease is not only communicable and preventable, but in its earlier stages, and if not too extensive in all stages, it is curable. That it is not necessarily a fatal disease, and that it is curable in all stages, I have seen abundant evidence. When taking antiseptics at the double-breasted connected with the Anderson and Workhouse hospitals and the Hospital for Consumption on Blackwell's Island, I have seen cases where there was confirmation in the apex of the lungs, showing that the consumption had been arrested either by Nature or the intervention of art. It is said that persons rarely have hereditary tendencies to consumption. In, as a rule, it is only a weak and constitution that is inherited. It is generally a result

feeding and wrong living that cause the disease in these individuals.

Correct alimentation in this disease is of the greatest importance as a remedial agent. To secure healthy, rich blood for the repair of diseased tissues we must have proper food and a good digestion. Usually the appetite is either depraved or is almost completely lost, so that the amount of nourishment taken by consumptives is often very small. If they have their own way and follow the cravings of a capricious and diseased appetite, they will take very little wholesome food. These diseased cravings for indigestible food must be removed before we can expect much improvement; they are indicative not only of an unhealthy state of the digestive tract, but of the whole system.

In the dietetic treatment of this disease there must be a definite plan pursued, and there are some important points which we must ever keep in mind. We must procure an effective elimination, not only of the waste products of the body, but of the diseased tissue itself. First we must prepare the digestive tract and the tissues of the body to receive and assimilate the nutriment, and then we must select the most nutritious food and so prepare it that it will be readily assimilated. Consumption is too often considered to be a local disease and treated as such. We must remember to treat the whole system, which is in a pathological condition. The most rational method of securing elimination through all the channels of the body is by stimulating the activity of all the emunctories by the ingestion of a large quantity of hot water, and by hot sponge-baths, followed by a vigorous rubbing of the skin. This plan of treatment to be effective must be systematically carried out, and both physician and patient must steadfastly avoid that complete dependence on drugs which converts the wisest method of treatment into blind empiricism.

The causation of a disease should be carefully studied, and then by treating the diathesis the consequent disease can be prevented or removed. Most diseases depend for their propagation upon defects of nutrition. These being removed the disease disappears. We must remove the cause, otherwise the disease will persist in spite of all treatment, and to do this a perfectly clear diagnosis is necessary. It is the bringing up of the vitality of the patient that leads to recovery, as it is a lowering of the vitality that is the first factor in producing disease. Wherever there is vital energy there is resistance to disease. It is a well-known fact that Nature has the power to cure in most cases if we give her the materials to work with, and at the same time attenuate the activity of the emunctories sufficiently to remove the poisonous waste.

The food for the consumptive must be a most select diet, based on a knowledge of what the different kinds of food do for the organism. We must provide food for the assimilation and elimination of waste products, and we must, for the most part, select food which is easily and readily assimilated, and of the highest nutritive value. There are many factors to be considered in the treatment of consumptives: diet, mental and physical, pure dry air, gentle exercise in the fresh air are important; but there are no others if the nutrition does not receive

proper attention. A knowledge of dietetics is far more essential to success than a knowledge of drugs in the treatment of either acute or chronic disease. A careful study of the physiology of digestion and assimilation and of the composition and value of the different foods clearly shows us the means by which we are to construct a diet of the greatest utility to consumptives. It would seem as if heretofore there had been a great lack of definite knowledge as to the construction of diet lists. The usual fault is that there is too great a variety for each meal, and much of it is comparatively difficult of digestion. The best argument in favor of the more enlightened dietetic treatment of consumption and of other chronic diseases is to be found in the clinical results. We now know, through a study of physiological chemistry, what foods are of high and what of low nutritive value; what ones are easily digested and assimilated; what require special gland elaboration before their nutritive elements can be utilized; what foods readily ferment, and what are the causes of this abnormal change.

Of especial value are the proteid or tissue-building foods, and the one which stands at the head of the list, because of its utility in this disease, is beef. It is difficult to show the importance of the selection of a correct amount of the different classes of food. If a certain class is taken in excess there is imperfect assimilation, and disease slowly but surely results. I have known fatal diabetes to result from excessive indulgence in raisins. Oatmeal mush, fermenting in the intestines, is a common factor in the production of nephritis. Malassimilation and the imperfect oxidation of waste products from overfeeding and bad cookery are at the foundation of most of the cases of consumption. A vegetable diet contains an injurious amount of the carbohydrates and too little of the proteid element, which, in this combination, is difficult of digestion. That a meat diet, with a small proportion of carbohydrates, is the best food for consumptives has been frequently demonstrated clinically. Milk has not as great a food value as meat because of its greater difficulty of digestion, its proneness to ferment from the sugar it contains, its lack of reparative material—not four per cent. of proteids—and the great danger of its being impure. Milk may fatten and keep the patient plump, but fat persons sometimes have tuberculosis, and much of the fat we see is unhealthful.

Bearing in mind the best proportions of the three classes of proximate principles—viz., that the amount of proteids taken should exceed the amount of starchy food and fat—it is proper to consider how these proportions can be obtained in a most nutritive and assimilable form, so that while the nutrition is brought to the highest point elimination must not be hindered. In the beginning of the treatment the patient should eat nothing sweet, sour, or fried, and starchy and farinaceous foods should be entirely prohibited, with the exception of a small quantity of stale bread or boiled rice, until the digestive and lymph channels are entirely free from the irritating products of fermentation. In consumption there is always a feeble digestion and frequently a low grade catarrhal and inflammatory state of the digestive tract and the glandular appendages. The internal administration of hot water will tend to remove this con-

dition and restore the parts to their normal state. It is not so much that large quantities of food should be taken, but that it should be thoroughly assimilated. The meat should be lean, juicy beef from the center of the round; and, after all the fat and fiber have been removed, it should be cut into small pieces and passed twice through a perfectly clean "Perfection" or "Enterprise" chopper; or it may be scraped or even chopped on the block by the butcher. This minute subdivision by grinding or chopping makes it most digestible. Many patients have bad teeth, which frequently infect the food. If the meat is not thoroughly masticated the stomach certainly can not prepare it for absorption. It should be kept sterile by handling it with perfectly clean hands only and by cleansing with boiling water every implement it touches. The pulp should now be pressed very gently into cakes from half to three fourths of an inch in thickness. If they are made too thick they will be difficult to cook, and they should not be pressed too firmly together, as this makes them less digestible and less palatable. The cakes should then be carefully broiled over a clear coal fire, or over one free from smoke and blaze, and they should be turned frequently to retain the juice. If desirable, they can be seasoned with a little salt, pepper, or butter.

Another method of cooking the beef pulp is to gently simmer it with a small quantity of water upon the back of the stove for about twenty minutes, or until the meat has turned from the raw red to a delicate pink color, with a brownish exterior. It should not be allowed to boil, as this coagulates the albumin, turning it a gray color, and making it difficult of digestion. This dish is commonly known as "Scotch collops."

When solid food can not be taken on account of fever, properly made beef tea, beef peptonoids, or peptonized milk may be given for a short time; but the ground beef in small quantity is preferable, and can hardly be called solid food. With this meat diet a small quantity of dry, stale bread, two days old, may be taken. It should not exceed in bulk the amount of meat eaten. After a time some vegetables can be carefully added in small quantity—a mealy potato, a little boiled rice, boiled hominy, sago, tapioca, or farina gruels; but our main dependence must be upon the beef. When there is a strong craving for more variety, the dietary may be extended by adding tender steak, lamb, mutton, turkey, game or chicken, French poule or string beans. The succulent vegetables—cucumbers, lettuce, dandelions, cauliflower, and spinach—are sometimes useful, as they assist in overcoming the constipation that is frequently present. The idiosyncrasies of the patient should be studied. Many have aversions to certain wholesome foods, but these can be usually overcome by a little coaxing and training. There are whole families who can not taste milk in any form. I have a patient, a young man of twenty, who can never taste tomatoes, even the juice of sliced tomatoes being sufficient to make him sick. There are other things also, such as asparagus and mushrooms, which it is impossible for him to eat, and like many others he can not eat Lima beans or yellow beans. Animals having a decided odor are exceedingly distasteful to him.

He has never eaten butter, and can not take it in any form, either fresh or salt, without it causing excessive nausea. These neuroses, as they may be termed, of the gustatory nerve are often really psychoses and are extremely common. They have frequently to be considered in the treatment of consumption. Many of our ordinary articles of diet are taken as the result of an acquired taste. This is particularly the case with tomatoes, Lima beans, oyster-plant, parsnips, carrots, and turnips. Many persons can not eat butter on bread, even when extremely hungry, without being nauseated. Again, some individuals never eat salt while others take inordinate quantities. In these cases there is always digestive derangement, and generally decomposition of starchy, saccharine, and fatty articles of diet. In the foregoing regimen these have been excluded to a great extent. If constipation be present, a little Turkish rhubarb or, better still, a small glass of senna tea, with an aromatic such as fennel to obviate griping, or a teaspoonful of table salt in a glass of water, may be taken on going to bed. Bad cooking and indigestible food, like cheese, pastry, baked beans, corn, lobsters, clams, pork, greasy macaroni, sausage, cabbage, pickles, porridge or mush, hard-boiled eggs, salads, veal, doughnuts, nuts, raisins, raw onions, cucumbers, fruits, and impure milk, should be carefully avoided. To this may be added strong tea and coffee, especially the latter, and all fried foods.

As regards liquids, the patient may be allowed to drink a cup of properly prepared, thick, home-made beef tea, or the expressed juice of beef every two or three hours, if very weak; otherwise only at meals. Peptonized milk, or milk and Highland water, or cocoa, or very weak tea, may also be taken for a change, but without sugar.

The patient should have a table to himself or eat alone, otherwise there will be a temptation to indulge in articles not permitted. When the appetite increases very much, four meals may be taken daily if needed, but at regular hours, the last one not to be later than seven o'clock. It is not well for the physician to be too strict in regard to diet, nor prejudiced against certain foods, as individuals vary. The meals should be simple, and confined to a few articles, the less the better.

Elimination of the diseased products is of extreme importance in all acute and chronic diseases. If the diseased materials are allowed to remain, the growth of bacilli will be correspondingly great. When the vitiated matter is removed by elimination, the disease can not be so severe, as then there is an internal respite which prevents healthy development. The eliminating organs should be stimulated, and hot water is the blandest and most efficacious means of accomplishing this. A glass or two of hot water should be taken an hour or two before meals, and half an hour before retiring, and one or two glasses of mineral water, with the meals to assist digestion and assimilation. It would be well if hot water alone were sufficient in this country as in China; they would to a degree be a substitute for the liquid manna, and would accomplish the same purpose in removing internal stasis and stimulating the patient without intoxicating him.

After elimination the next important step is to build up, when possible, the diseased and broken-down lung tissue. This is accomplished by stimulating the manufacture of pure, fresh blood. To understand thoroughly the dietetic treatment of disease, it is absolutely necessary to know perfectly, not only the composition of the different foods, but the changes they undergo when taken into the system. We are omnivorous, and if we indulge to excess in any indigestible or special kind of food for a lengthened period of time we overtax the system and disease is the result. Almost all chronic diseases are developed in this way, and this is the most common predisposing factor to acute disease. The kinds of food which are generally taken in excess are the starchy, saccharine, and fatty. These foods, however, are more easily oxidized than the proteids.

In consumption, there being an excess of waste, we must be careful to get the proper quantities and proportions of proteid and carbohydrate foods, and have the waste products completely oxidized. When fresh meat is taken there is an increase of the red corpuscles—the oxygen carriers—but there is a limit to the quantity of food that can be oxidized. Ordinarily, we take too much carbohydrate food, and our meats (proteids) are, except in the largest cities and among the more intelligent, usually improperly cooked—most generally fried. It is the taking of excessive quantities of indigestible and stimulating foods that causes disease. To maintain the highest standard of health, more of meat than of vegetable food should be taken. Carnivorous or meat-eating animals seldom have consumption, while it is quite common in the herbivorous or vegetable-eating animals. The greater "vitality" or activity of the former as compared with the latter is worthy of note.

The fallacies of a purely vegetable diet are most commonly demonstrated by the bedside of the patient. Such a diet requires a greater amount of oxygen and more extensive elaboration by the glandular structures of the body, and results in an excess of waste, which must be excreted. I have seen nephritis developed by the excessive indulgence in cereal and fried foods. Milk, although almost universally recommended, is not a good exclusive diet for a consumptive. It is all right for small children and babies, who simply require to be kept warm with fattening food. I do not disapprove of it because a large percentage of cows are tuberculous, but experience has taught me that a meat diet is far preferable for adults. It is a concentrated and most nutritious food, and with it is easy of digestion. In Japan there are hardly any cows, yet the people are in good health.

In treating consumption we should give more attention to the liver than to the lungs. We should restore the biliary secretion to a healthy standard, both as to quality and quantity. From our standpoint the liver is the most important organ, for by its defective elaboration of food products nutrition is impaired, and weakness and disease result. Overfeeding and improper feeding tend to imperfect elaboration and elimination by giving the liver and kidneys too much work to perform.

I do not entirely discard milk in all cases, but I think too much reliance has been placed upon it alone as a reconstructive tissue food. There are many who say they can not take milk, but the stomach can be trained to receive it and in a short time to relish it. A very small quantity should be given at first. It should be remembered, however, that milk has been shown to contain a number of parasites and bacteria.

There is a strong tendency to lose sight of the great underlying principle in medicine, that vital force depends solely upon the nutrition of the tissues, and can only be increased by improving the nutrition. The words "starvation" and "self-poisoning" from a clinical standpoint are the most important words of all those in the domain of medicine. Both of them signify "decay," and decay is death.

Climate and medicines alone will not often cure consumption, although they may tend to prevent it. In this disease the increased digestion of nitrogenous food is our sheet anchor, and when this is inadequate there is no arresting the progress of the malady. There are certain forms of consumption which, when well advanced, are beyond dietetic or medicinal aid, but there are other and more common types which are readily curable. Even in cases where the lungs are much involved the progress of the disease can be permanently arrested. While nothing gives such good results as careful dietetic treatment, aided by medicines, a careful preparation of the digestive tract and its appendages should not be omitted. This not only removes catarrhal and inflammatory states, but gives tone and strength to the muscular and nervous systems, stops diarrhoea, nausea, and fever, restores the appetite, and increases and enriches the blood supply. Climate is often a great aid to such treatment, and when combined with other hygienic treatment brings back health and vigor to many a hopeless consumptive. Where much lung tissue has been destroyed, it frequently arrests the disease, even though it is impossible to entirely cure it.

Pure Atmosphere.—All dietetic, general, tonic, or other treatment is useless unless there is a plentiful supply of pure air. Pure air is a great stimulant to the appetite and digestion. The rooms occupied by the sick one should therefore be carefully ventilated without producing draughts, and in cold weather should be filled with a genial warmth. The patient should be out of doors as much as possible when the weather is not too severe.

Exercise.—Gentle exercise, without fatigue, has a very beneficial effect upon nutrition by stimulating the action of the heart, accelerating the circulation, and increasing the respiration. It thus increases the oxidation of waste products and leaves room for the assimilation of nutriment. For the weak, a daily carriage ride is beneficial, and for those who can not afford this the street cars can be utilized. Boat rides on bays, lakes, or rivers, and sea voyages are also often very beneficial; but the sick one must be well wrapped up. For those who are able, walking in moderation is a very useful form of exercise.

Bathing.—The skin should assist in the work of elimination and protection. Cold sponge baths to the chest

have a salutary effect on the lungs, but must be immediately followed by friction with a coarse towel. A hot sponge bath, with a little kretol added, should be taken at night, and the body should be vigorously rubbed afterward. If there is a tendency to "catching cold," the body may be well rubbed with some nutritive oil.

Apparel.—Flannel undergarments of a thickness suitable to the season should be worn. It would be difficult to get them too thick for our severe winters. In cold weather the stockings should be of wool.

For cleanliness, a soap-and-water or hot salt-water bath should be taken at night before retiring. This should be done in a very warm room, and at least twice a week if no other baths are taken.

The following cases are interesting in this connection, and illustrate the value of this method of treatment:

Miss K. D., twenty-five years of age, consulted me eight years ago. She had a troublesome cough, was chilly and feverish, and had some pain in the chest. Her appetite was poor, she had night sweats, and there was considerable emaciation and weakness. On physical examination, I found a catarrhal condition of the apex of the left lung. She had been living upon a very innutritious and indigestible diet and sleeping in a room without proper ventilation. She had always worn cotton undergarments even in winter. Under careful dietetic treatment she made a perfect recovery, and remained well until last February, when, as a result of a return to her careless habits of eating and an exposure to cold, there was a return of the cough. This has again left her, and she is now perfectly well.

Mr. B. D., twenty-five years of age, a business man, first consulted me six years ago. He had at that time specific disease and consolidation of the upper portion of the right lung. There was severe cough with abundant mucopurulent expectoration containing tubercle bacilli. He had fever every afternoon, and very severe night sweats. The tongue was heavily coated, there was entire loss of appetite, and consumption was present. Under careful dietetic and medicinal treatment he recovered, and is living in good health, although there is diminished respiration and expansion of the chest on that side. He has been refused as a rule by two other physicians, on account of the condition of his lung. He looks well, never coughs now, and says he is "all right." He does a hard amount of hard work daily.

Mrs. N. O. H., twenty-two years of age, a school teacher, when seven years ago gave the following history: She had had gastro-intestinal catarrh and chronic dyspepsia, and had almost suffered from "anemia" at her menstrual periods. She had been extremely nervous and excited since having had an attack of bronchitis. She had been under the care of several physicians, but of course had told her that the cough should be treated and strength built. Her cough was very severe, and accompanied by a profuse expectoration containing tubercle bacilli and tubercle bacilli. One of her sisters had died of consumption, and she was distressed by her mother's anxiety, devoted to nursing with the same illness. For a considerable time she had been suffering chiefly from general debility and nervousness, the result of a disturbed appetite. Her mother, who had been fresh, healthy, better, stronger, more patient, looser, rarer food, and not in any way so nervous as she had been at that time. Under dietetic treatment with special attention devoted to the improvement of the general health, the general condition of the patient improved. The attack of nervous depression

which had been severe, entirely disappeared, and in a very short time her health was completely restored.

Miss M. S., twenty-one years of age, I first saw six years ago. Part of the lower lobe of her left lung had already been destroyed by a tuberculous ulceration about three inches wide and five inches long. Dead portions of two ribs, four inches long and as black as ebony, were protruding from her side. The fingers could be passed between them and the ulceration. Her diet had consisted principally of bananas and cream-puffs, for which she had an inordinate craving. Wholesome food was extremely distasteful to her. Under strict regimen of hot water, chopped beef, and stale bread, with a local antiseptic wash and a digestant internally, the necrosed portion of the ribs dropped off and the ulceration healed in a week. She is now in good health, although very careless at times about her food.

Miss M. N., twenty-six years of age. Her father's failure and death compelled her to work for a living. When I first saw her, four years ago, she had been under the treatment of some of the best-known physicians of Brooklyn. The prognosis given to her relatives was that she might live a month or two at the very longest. After a physical examination it seemed to me that the prognosis was not so grave. I found a cavity occupying the whole of the upper half of the right lung, while the lower portion was completely consolidated. In the left lung the respiratory murmur was diminished, and there were mucous rales. There was a very troublesome cough, with profuse and purulent expectoration. Respiration was so greatly embarrassed that she could not converse without stopping frequently to gasp for breath. Her pulse was rapid, small, and weak, and the tongue was heavily coated. She had been living upon an almost exclusively vegetable diet. Her breakfast had consisted usually of coffee and fresh rolls. She had been engaged as cashier in a large retail drug store, and her dinner, which she had usually eaten in the neighboring bake shop, had been generally indigestible and of poor quality. Her supper had also been scanty and innutritious, as she had often been too fatigued to eat. She had never received any advice as to diet from other physicians. I placed her upon a diet consisting largely of ground beef, with a small quantity of farinaceous food, and with hot water as an eliminative. She almost immediately began to improve, and two years afterward I found on physical examination that the consolidated lower half of her right lung had resumed its function, while the left lung was entirely sound. During the heated term last summer she began to decline, and died last November. Under careful dietetic treatment her life had been prolonged, she had continued at her work, and the disease had been arrested for a considerable time.

Mrs. W. N. V., thirty years of age, was taken ill six years ago with bronchitis, and since then a cough has persisted, and for the last two years has been very harassing. There have been at times chilliness and fever, with loss of appetite and night sweats, exhaustion, and emaciation. Three years ago she had a pulmonary hemorrhage, and every time she coughed she brought up blood for days. The illness continued to the right lung. Two years ago she had several attacks of profuse hemorrhage, and was confined to bed for a week. She was then in a very weak condition, and was unable to do any work. The last hemorrhage was in July, 1894, when I began treatment by dietetic means. She followed the plan of treatment (p. 11). She had no hemorrhages, and she felt that her health was better. She followed the system for about the better part of a year. There was a great change for the better in her appearance, her energy and vitality had already improved. Two weeks before her death, the appetite was new, healthy, and she was happy.

Many similar cases could be enumerated, but the foregoing are sufficient to show the success of this method of treatment.

776 MADISON AVENUE.

WHERE TO SEND THE CONSUMPTIVE IN SOUTHERN CALIFORNIA.

By WILLIAM H. DUKEMAN, M. D.
LOS ANGELES, CAL.

THE climate of southern California from the tourists' point of view, and from that of the not overcautious and casual observer as well, is indeed a lovely, delightful, and glorious one, with a scenery eastward of captivating snow-clad mountains and rugged hillsides, overlooking beautiful green productive valleys, and westward with a long expanse of semitropical seacoast, and with days of sunshine to the heart's content. A climate with a temperature very rarely reaching the nineties in the summer, and with but few frosty mornings in the winter. Yet a lengthened residence here convinces me that it is not the best climate for the purposes for which many seek it, nor for the many (exceptional?) advantages that are so laudably alleged for it indiscriminately as a home for the consumptive.

The promiscuous manner in which the physicians of the East send the consumptive here is a sad mistake, for southern California *in general* is not a good place for such invalids. We have but few selected localities where the consumptive may expect to derive benefit, and then only too when he comes here in the early stages of the disease. These localities are not in our cities where too many physicians send these unfortunates. Experience has taught us that such places are rather isolated and are either in the mountains, on the desert, or along the seacoast. The best places are along the southern exposure of the foothills of the mountain ranges of Kern, San Bernardino, and Los Angeles counties; off the coast of San Diego and Santa Barbara counties, and in Indio Valley on the Colorado Desert.

Where a dry land breeze and a warm atmosphere are desired Indio Valley offers many exceptional advantages. It is fifty feet below sea level and in a basin which in some places is three hundred and fifty feet below sea level. The temperature extremes vary from 30° F. at night time to 90° F. at midday during the winter months, and from 60° F. at night time to 120° F. at midday during the summer months. The rainfall on an average is less than one inch for the year. The average relative humidity is about sixty. At the best at the summer during midday is at times extreme, and the atmosphere extremely dry, only those specially requiring a hot, dry climate should remain here during the summer months. The consumptive will find it an inhospitable climate during the summer from October to May, so he can here comfortably outbask every day in the sun. Indio has a good hotel, good water supply, telegraph and post office, and is on the line of the Southern Pacific Railroad (about eight miles from Los Angeles).

Those interested in obtaining an especially cool climate

will find no better place than that of San Diego. The temperature extremes vary from 40° to 90° F. the year round; the daily variation is less than that of Santa Barbara, and the winter months are very little colder than the summer. It is, in fact, an ideal climate for the comfort of the invalid, tourist, and pleasure-seeker alike.

For those requiring a higher altitude and a slightly cooler climate, there are along the foothills of the mountain ranges a number of resorts with good hotels, with the most delightful surroundings, and only a few miles from our cities. The resorts are many, and each one offers special advantages. Whether on the desert in Indio, or along the coast of San Diego, or along the foothills of the mountain ranges, the aseptic, ozonized, dry or moist balmy atmosphere, coming as it does either from sea, desert, valley, or mountain, with a dry or moderate relative humidity, the direct vitalizing wants to a diseased lung are supplied. This, with the bright, warm, sunshiny days throughout the year, proclaim for the consumptive the benefits to be derived from a residence in southern California. Once located at either place, he should remain, not a few weeks, or months, or a year, but he should forever make his home the remainder of his life at such place suitable to his particular case, and not go to the city as soon as he feels an improvement in his condition, as is invariably the case, with the result of only to be obliged to return very soon all the worse for making the change. For surely if he regains his health by arresting the progress of so fatal a disease by living at a favorable locality, he becomes as a summer house plant, tenderly cared for by favored surroundings, and, as the house plant, delicate in structure. While, perhaps, his ambition recuperates, his vital energies have in a measure declined. He will find that he no longer has the hard, brawny muscles of the once inhabitant of the temperate climate. A change has taken place. The category of improvement in his case is due partly to the indolence this climate brings upon one. It gives that rest thereby to his entire structure, retaining for the time the latent energies yet stored up in his system to be called upon as needed to restore that extravagant waste engendered by the disease. To the help of the favorable surroundings he alone owes his improved condition, and it is at such place his duty to remain. He should live as much as possible in the open air, not in hotel or lodging house in the city or town, but in a cottage or tent at either of the above-named places. Sunshine and an aseptic atmosphere he must have in this climate, and not house warmth and an infected atmosphere of our cities. For the atmosphere of our cities is no better in this respect than that of other cities, and perhaps not so good. The cottage or tent should be situated on the southern slope of a hill or rise in the land, and so situated as to get the rays of the sun on all sides. For in this climate in the shade there is an unpleasant, ungrateful chilly coolness even during the warm summer days, which is as perceptible under the shade of a palm tree as on the shaded side of a house or hillside. Why this coolness when the thermometer in the sun registers 80° to 100° F. I must leave each one to account for for himself. Even the robust, healthy individual in summer

evenings always goes provided against this coolness with an overcoat. An overcoat is a very essential garment in this climate the year round.

This coolness of atmosphere, which exists at all times in the shade and is very pronounced at nightfall, is one of the drawbacks of this climate as a health resort.

A pleasant coolness of atmosphere of a summer evening in a temperate climate is invigorating; it stimulates the vital energies and brings the blood to the surface, producing a ruddy flush on the cheek, and makes the individual full of life and activity. It is not so with the ungrateful chilliness of the atmosphere at nightfall in this climate. It in some way depresses the system; the invalid loses all activity and energy; he is inclined to assume a quiet position and fears to move, for every change of position he makes adds to his discomfort. Therefore the circulation is depressed, the blood does not flow so freely to the surface, and, instead of one looking refreshed with glowing cheeks, he is pale and blue and cold and chilled clear to the marrow, and feels so uncomfortable and cold as though the flesh were retreating from the bones—so peculiar is the effect of this coolness at times and at nightfall. On summer evenings it is very common to see our people in street cars bundled up in overcoats and wraps to protect themselves against this uncomfortable chilliness. This peculiar coolness of atmosphere, so perceptible in many localities, alone denounces such locality as a resort for the consumptive.

In our cities and towns are many lodging houses and private hotels, which offer many inducements at moderate prices to the invalid, as it is very essential that their patronage be secured or they could not exist. As a rule, they are abominations and death traps and a menace to a healthful people. (Our better class of hotels are, however, well taken care of.) Just think of a lodging house that has lodged, week after week, consumptives (and other invalids) there, without ever having been renovated or thoroughly cleaned, and later a healthy person or another invalid to occupy the same room and same bed as the consumptive in the last stages of the disease—a bed that only sheets and pillow cases have been perhaps washed, all other bedding and furniture remaining just as the unfortunate one left it, without even there having been a cuspidor or other device for him to expectorate into, and said room never having been disinfected. You can well picture the danger without my entering into further details. Numerous such places are scattered all over our cities. The invalids, and the healthy as well, should be instructed to avoid these places, and they will then be obliged to go out of existence. This is not all. Hundreds of families have rooms to let to the tourist, the invalid, or any one who applies. In many instances these rooms are very little better cared for, and very few, I am sorry to say, are ever thoroughly renovated after the consumptive leaves them. I need not say more, or perhaps you may think our cities are much more of this sort than I indicate. Our boards of health, however, are ignorant of these facts, and we hope that one day they will follow the steps taken by the board of health at Michigan and New York, for, certainly, if any State in the Union requires that sanitary regulations be State of California should.

Thousands of invalids enter this State every year. Thousands of consumptives live here, not in their own homes, but at these lodging and rooming houses. Many are sent here, I am sorry to say, in the last stages of the disease, and in a few weeks, or perhaps months, are returned to their friends in a casket. Brother physicians, why send such consumptives so far away from home, when you all know too well the speedy result? Yet, day after day, we are consulted by such unfortunates, only to advise them to return to their homes and friends while they yet have the strength to withstand the return journey, and receive the kind care from those who are near and dear to them.

If the disease is infectious, then the cities of southern California are not the places to send any more consumptives. As an illustration to show how numerous are they among us, I found, out of twelve hundred examinations for life insurance, ninety-seven with diseased lungs.* Surely, if one twelfth of the applications made for life insurance are rejected on account of lung disease, then the total number of people here who have disease of the lungs must be appalling. The statistics of our health office show that about thirty per cent. of the deaths are due directly and indirectly to tuberculosis. The greater number of these deaths are just such residents as I have above spoken of, many of them being residents only a short time—perhaps resided here only a few weeks.

While it is also true that many phthisical persons have apparently regained their health after a long residence here, they came here at an early date and at a time when the surroundings were much different and more favorable, and when our cities were mere villages and the source of infection at a minimum.

Los Angeles city to day is not a sanitarium in any sense of the word; it has been made a resort and dumping place for the consumptive, and physicians and every one else should know this fact none too soon.

We hope that very soon tuberculosis will be included in the list of infectious diseases by our board of health, and every such case will then be reported to the health authorities, to receive and carry out such instructions as will protect the health of others as well as themselves. Then every one sent here in the advanced stages may be isolated, and thereby we will protect the public. While Los Angeles may have been advertised in the past as a sanitarium for the consumptive, we can no longer do so. Yet, instead, I have placed the facts before the reader that will enable him to act intelligently when contemplating sending the invalid to southern California. Such persons I have mentioned have all the desired accommodation, with Nature's sanitary surroundings, and the consumptive seeking the benefits to be derived from the climate of southern California should not come with the intention of making his home in Los Angeles.

THE LOS ANGELES SANITARIUM.

* From the Southern Pacific, A. G. Report of Traffic, Household Expenses, and the Like, Commencing March 1st, 1893, p. 101.

A CASE OF PSEUDO-HERMAPHRODITISM.*

By MAURICE A. WALKER, M.D.,

DEMONSTRATOR OF ANATOMY,
MEDICAL DEPARTMENT, UNIVERSITY OF DENVER, COLO.

GEORGE S., twenty-four years old, born of a good family in Vienna. He has one sister and two brothers, all of whom are well formed and have perfect children. When a child he was not treated well by his father, probably on account of his deformity. As a result of this treatment, he left his home about ten years ago and came to this country, where he has resided ever since. Before emigrating he had served his time as a cabinet-maker, and has worked at his trade the greater part of the time since, until about a year ago, when the general business depression prevented him from obtaining work. He has always been in good health.

He is five feet three inches tall, and his usual weight is between one hundred and fifty-five and one hundred and sixty-five pounds. Though stoutly built, the general form is rather that of a masculine woman, excepting the face, which is more that of a male, and thinly covered with a growth of downy hair, sufficient to necessitate shaving at intervals of from ten days to two weeks, in order not to show the nature of the growth. The shoulders are broad as compared with the height, measuring fourteen inches and a half between the acromial tips. The shoulders, arms, and forearms, though covered with a moderate amount of adipose, are muscular. The grip is strong, and he says that he can lift more than can most men. The axillæ are hairless.

The thorax, under the arms, measures in the quiescent state thirty-five inches; during forced expiration, thirty-three inches and a half; and during forced inspiration, thirty-six inches and a half, giving a chest expansion of three inches. In the usual position over the pectorals are well-developed and somewhat pendulous breasts, with erectile nipples and distinct areolæ. On several occasions, during either the menstrual epoch or sexual excitement, when the breasts and nipples become more firm, a slight amount of watery fluid has exuded from the nipples, but never any milk. The breasts were first noticed by him to become prominent when he was about fifteen years old, and since then they have been gradually increasing in size, especially in the last few months, during which time the growth has been so rapid that he contemplates having them removed. He says he can not do outside carpenter work on account of the necessity of keeping the breasts well covered from sight, and so suffering from the heat. Respiration is of the male type, abdominal and inferior costal.

The lower parts of the trunk and the thighs resemble those of a female—prominent buttocks and apparently adducted thighs—although the buttocks are well developed, as are those of the ordinary male. The circumference at the umbilicus is thirty-one inches, and about the hips thirty-six inches and a half. The distance between the iliac crests is ten inches and a half; between the anterior superior iliac spines, nine inches.

Over the lower breast is a well-marked transverse crease, with a deposit of fat, and covered with rather short, brown hair. Below this, in the middle line, at about the level of the second umbilical space, is a distinct, at least three-eighths of an inch, and where the crease of the transverse crease is at its most perfect development. The superficial mucous membrane is not much raised from the skin; the papilla is small, but erect, fair in color, and as a rule smaller in size than the thickened clitoris, and certainly smaller in size than the clitoris.

On either side of the sexual organ may be seen and felt the sexual gland, covered by one half of a divided scrotum or a labium majus. These testicular sacs are hairless. The glands in every respect resemble testes, the epididymis of each lying posteriorly and to the outer side. The testes are about an inch and a half long, the right being slightly larger, and placed a little lower than the left. Their inclosing sacs are not at all pendulous. Lying between the two semi-scroti or labia majora are two red, irregularly-shaped muco-cutaneous folds, continuous anteriorly with the posterior border of the prepuce. These folds lie parallel and close together, extending backward nearly to the plane of the posterior ends of the testes, where there is inclosed and hidden between them the urethral opening, having a diameter of six or seven millimetres.

About half an inch behind the meatus is situated a depression corresponding in position and appearance to the introitus vaginæ. This depression is about three eighths of an inch wide at its center, an inch long and from one fourth to three eighths of an inch deep, its bottom covered by a muco-cutaneous diaphragm. Surrounding this depression are traces of labia minora. Laterally, on either side, from about opposite the middle of the vaginal depression forward to and continuous with the posterior end of the testicular sac, is a fatty elevation about three fourths of an inch long, one fourth to three eighths of an inch wide, and about one fourth of an inch high—the remains of the labium majus. Between the urethra and the vaginal depression the skin may be invaginated by the finger to the depth of an inch and a half or an inch and three quarters, showing at least the possibility of the existence of a vaginal canal.

Between the posterior end of the vaginal depression and the anus there is a slight elevation of the perineal raphe. Urethral examination was not permitted.

By digital rectal examination, the rectal pouch was found to extend well forward immediately above the sphincters. In the usual position of the prostate anterior to the rectum could be felt a structure seemingly nearly spherical and having a diameter of one half or three quarters of an inch. Bimanual rectal examination failed to show anything corresponding to a uterus or appendages.

In this man sexual desire is present, the desires being always those of a male. During sexual excitement the sexual organ attains a length of two inches and a half or three inches, the remains of the labia majora become slightly turgid and swollen, the nipples erect, and the breasts increased in firmness. Emissions following lascivious dreams or other causes are quite frequent—at least three or four times a month—and the fluid emitted is viscid and colorless. Sometimes, when from the sensation of the orgasm he would expect an emission, the man states that there is none at all and at other times "as much as a tumbleful." He has occasionally had intercourse with females in a peculiar manner, but does not often do so, on account of shame at his deformity.

With regard to menstruation, he remembers that when a small boy he was subject to apparently causeless attacks of epistaxis. At about sixteen or seventeen years of age he first noticed their greater or less regularity.

Now his epistaxis occurs with as great regularity as the menstruation of many women—usually every four weeks, but occasionally extending to an interval of five or even six weeks. Bleeding is sometimes profuse, lasting for one or even two hours, and occurring two or three times a day for about two days. At this time the breasts become firmer, he has slight headache and malaise, and an ill-defined feeling of tenderness in the lumbar and lateral pelvic regions. However, he says he does not feel sufficiently ill to deter him from work when he

* Read before the Medical Society of the University of Denver, June 15, 1904.

has work. On several different occasions at this period there has been slight hæmorrhage from the urethra. These attacks have been infrequent, occurred independently of micturition, and were unaccompanied by any symptoms of cystitis, nephritis, or any morbid cause. Between the menstrual times he is free from epistaxis until the next regular monthly period. During the periods the voice is several tones higher in pitch than at other times.

Without discussing hermaphroditism, I will say that cases of true complete hermaphroditism recorded are about as rare as the frequently-mentioned hen's teeth. In this case the non-fusion of the genital folds has resulted in a perineal opening of the urethra and the presence of the muco-cutaneous folds resembling labia minora between the scrotal sacs. Ordinarily the fusion of these folds and their subsequent covering in by the fusion of the genital ridges completes the penile urethra and scrotum. The genital ridges, instead of going on to fusion in front of the perfect urethra and forming a normal scrotum with its median rhapshe, have fused on either side of the median line, thus forming two distinct sacs, and into each of these sacs has descended its corresponding testicle. I believe that some sort of a vaginal canal exists in this person, and I am supported in this belief by the ability to invaginate with the finger the post-urethral region and by the evident accumulation of a large amount of fluid, discharged at the time of expected emission. It is a quite common occurrence that in these more or less mixed cases there is a vagina the only external opening of which is through the meatus urinarius.

That this person has well developed breasts, vicarious menstruation, with change of voice, and no beard, is no evidence of the possession of ovaries, because, as we have all observed without being able to explain, when either from congenital defect or operative procedure a person comes to more or less resemble the opposite or is deprived of his or her own sex, the bodily conformation and bodily and mental habits of the opposite sex, to a greater or less degree, according to age, are ingrafted upon or replace those of the former or natural state.

It is my opinion that the case which I have described is one of arrested development or hypospadias, and the person beyond question a male, who may have more or less rudimentary ovaries, uterus, and vagina.

601 FROTHINGHAM STREET.

LAMINECTOMY:

REMOVAL OF THE VERTEBRAL SPINES AND LAMINÆ.

BY HALL C. WYMAN, M.S., M.D.

ASSISTANT SURGEON, NEW YORK HOSPITAL.

READ AT THE ANNUAL MEETING OF THE MEDICAL SOCIETY OF NEW YORK, 1894.

Why the Greek language should be invoked for a word to indicate that the vertebral canal may be opened when it contains pathological conditions which interfere with the normal action of the spinal cord is a question I do not propose to discuss. It may be that those surgeons who have cut from the dead languages so many of those crisp, mischievous words which are used to embellish English medical literature had in mind something more than the mere

hiding from vulgar eyes and ears of the technique of valuable operations.

When the function of the spinal cord is impaired by the pressure of a blood clot, a hæmorrhage, an effusion, a depressed piece of bone, a dislocation, a foreign body, an abscess, or a tumor, there is good reason to believe that removal of this pressure will favor the restoration of the normal offices of the cord and help the patient to get well.

The bony cavity in which the spinal cord rests is not difficult of access, nor is the mere opening of it by surgical means more serious than opening the cranial cavity.

Dogs and cats tolerate exposure of the spinal dura mater through a wound in the posterior segment of the vertebra with almost trifling inconvenience, and on them the surgeon can learn more of the handicraft of removal of the spinous processes and vertebral laminae in a few hours than can be learned by months of patient study of the literature of laminectomy or laminotomy.

There are characteristic differences between the cervical, dorsal, and lumbar regions which cause corresponding differences in the methods of doing these operations; and it is an addition to the operation to open the dura mater of the cord and explore its vascular and serous membranes. The danger to life is greatly increased. The most delicate manipulations must be familiar to the surgeon who would do this. He can not be permitted to tear round with his fingers and instruments as if he were removing an ovary or peeling out a uterus. The godless and indiscriminating surgeon will never "cut for record" in spinal cases. One thing will always discourage and deter him—the patients are always sick, except in the rare cases of railway spine.

The vertebral canal may be opened so that the lateral and posterior aspects of the spinal cord can be easily examined by first making an incision through the integument and superficial fascia, four inches long, over the spinous processes nearest to the diseased area of the spinal cord. Then the muscles and tendons must be cut away from their attachments to the spinous processes and the laminae. For this purpose it is well to use a strong knife and periosteal elevator, so that the periosteum may be turned back with the tendons and muscles, as it subsequently becomes useful in filling in the boneless area. A pair of strong retractors with teeth are commonly needed to hold back the soft parts, so that the laminae can be divided with a chisel and bone forceps. After the lamina on each side of the spinous process have been cut through, the latter is caught with a strong forceps and lifted from its bed, exposing the vertebral cavity and the dura mater. A considerable space normally exists between the dura mater and its surrounding wall of bone. Through an opening made by lifting out the spinous process and lifting it out, verifying the cord can generally be examined by means of an hook above and below the opening. It is not often necessary to remove more than the posterior aspect of the vertebrae. If the chisel and bone forceps are used carefully and no more bone is removed than is necessary to remove the pathological condition on which the operation was done, there will be no need of special metal apparatus to support the spine during the healing of the wound.

I dress the wound carefully with gauze and cotton and change the dressing as often as it becomes soiled. It is not a good plan to turn the patient during the dressing of the wound. It is better to have three or four strong attendants, who can lift him three times a day from his bed and support him in a horizontal position while the dressings are being applied.

In closing the wound, I take pains to close the peritoneum and muscles over the boneless area with silk sutures.

Drainage by means of tube or gauzes is rarely needed, because gravity is competent to do the work.

The internal treatment is generally limited to tonics and special attention to diet.

The impairment of bowels and bladder incident to paraplegia makes the after treatment and care of laminectomy cases particularly important. Bedsores are sure to come if the patient is not lifted from his bed several times every twenty-four hours. I have tried many devices for moving the patient to facilitate keeping him clean, but have succeeded best when I have summoned a sufficient number of nurses to lift him bodily as often as required. The dribbling urine is apt to get into the bedding and infect the wound if it is not carefully conducted away. I have had no trouble from using a sterilized catheter, lubricated with freshly sterilized oil, three times a day, and in the intervals a rubber or glass urinal has been constantly in service.

A diet containing well-cooked Indian meal helps to keep the bowels in a proper state of solvency.

A CASE OF STRANGULATED FEMORAL HERNIA.*

By W. S. WEISSINGER, M. D.,

HERNANDO, MISS.

It is my honor as well as pleasure to report for your consideration the following case of strangulated femoral hernia:

Miss Bettie L., aged sixty-one years, had suffered at varying intervals for seventeen years with a right femoral hernia, which had been readily reducible until early in the year 1893, when it became irreducible, but caused little inconvenience until the evening of the 18th day of November, 1895.

On this day, the patient having been for several days preceding depressed from a mild attack of "grippe," and while her bowels were acting from purgative medicine administered during the course of treatment for the "grippe," she was seized with violent colicky pains and cramps in and throughout the abdomen, accompanied by symptoms of moderate collapse. She collapsed at six p. m. November 18th.

Her family physician, Dr. Anderson, of Loves, Miss., was immediately summoned to her bed. He succeeded partially only in relieving the collapse, pains, and cramps with opiates hypodermically, the being unable to obtain anything on her abdomen, and the application of heat being. He then made the diagnosis of strangulated femoral hernia, and an incision was made at the junction of the femoral vein and Dr. A. B. Ferrell, of Dancville, Tenn., was called to see her on the same day, i. e., 9 November 1895. Dr. Ferrell, on finding Dr. Anderson's diagnosis, advised and attempted reduction under anæsthesia, which was also unsuccessful. The two

doctors then administered morphine hypodermically, directed more morphine by the mouth, and left her. Returning on the morning of the 20th, they found the patient in about the same condition as the morning preceding, with this addition, that the vomiting, which had been persistent, had become feculent.

An operation was insisted upon at this consultation and the patient warned that without it death was inevitable. This was again declined, the patient insisting that she be allowed to die. The doctors then withdrew, having left directions that morphine be used freely for the relief of pain, and that the patient be nourished as best she could. The doctors made no other professional visit to her, but called at intervals of two or three days to see what her condition was, to find her suffering at each time from fecal vomiting and only a little more exhausted, until the 4th of December, about 3 p. m., when I was summoned to her. Dr. A. B. Ferrell, then of Loves, Miss., but now at Palestine, Ark., and Dr. T. K. Powell, of Dancville, Tenn., were my guests, and they, with Dr. W. A. Powell, of Hernando, Miss., were invited to see the patient with me, which they kindly consented to do. We found the patient very much exhausted, pulse 120, temperature 96°, pinched and cadaveric expression, fetid breath, very restless, and still persisting in her desire to die and to be let alone. After a full consultation of all the medical gentlemen named, there was but one opinion, and that was that the patient presented the most remarkable case of strangulated hernia of which any of us had ever either seen, heard, or read. We decided to operate and give the patient the only chance for recovery. For two reasons the operation was deferred until the morning following: First, the great probability of the bowels being necrotic, and there being no silk worm or catgut ligatures or Murphy's button at hand; and, second, the hope that by hypodermics of morphine and atropine sulphates, and rectal enemas of milk and whisky, the patient's condition might be improved. Accordingly, we administered a hypodermic of a quarter of a grain of morphine sulphate and one one-hundredth of a grain of atropine sulphate, to be repeated as often as necessary, and every six hours anyway.

The patient was placed between blankets and sufficient covering directed, and jugs and bottles of hot water kept in close proximity to her extremities and body, a rectal enema of four ounces of sweet milk and two ounces of whisky administered, and ordered repeated every three hours.

On the morning of December 5th, the seventeenth day from the onset of the foregoing symptoms, Dr. T. K. Powell having returned to his home, accompanied by Dr. Ferrell and Dr. W. A. Powell, I returned to see the patient, prepared to operate. We found her condition somewhat improved; temperature 96.5°, pulse 115 and of better character, her appearance slightly less cadaveric. She had several short naps during the night, and partial relief from the nausea and vomiting, though the matters vomited were of the same decided stercoraceous character as during the sixteen days preceding. There had still been no movement of bowels at all, only three times enemas being returned. A fact and symptom of the first importance all through the case I state here, which might have been with propriety stated sooner—namely, a complete inaction of the bowels since the accession of the first symptom of strangulation. There was a regular but deficient action of the kidneys all through the period of strangulation.

The patient was placed on the table at eleven o'clock, anesthetized with chloroform, the field of operation and contiguous parts for some distance thoroughly cleansed with soap and hot water, shaved, and thoroughly disinfected. In fact, the entire operation was conducted under strict antisepsis. After cutting down through the tumor in a vertical direction, the center of

*Read before the Mississippi State Medical Association, April 2, 1896.

the incision being over the femoral ring and exposing the sac, the dissection was continued through this between dissecting forceps. Upon opening the sac there escaped a small quantity—two drachms or two drachms and a half—of brownish, blackish fluid of an offensive odor. Then was disclosed to view a portion of bowel equal in dimension to the space covered by two fingers in width and two thirds of a finger in length, lying internal to double the quantity of omentum, or, to be exact, as I weighed it, three ounces avoirdupois. The color of the intestine was dark maroon and that of the omentum nearly black.

There existed slight adhesion of the bowel to the omentum, and stronger adhesion of the omentum to the outer wall of the sac. Keeping the back of the finger to the bowel and femoral vessels, the point of the finger was carried to the under sharp edge of Gimbernat's ligament, to its attachment to the os pubis; the blade of a long probe-pointed bistoury, with its edge directed toward the median line, was carried flatwise along the palmar side of the finger. The constriction was divided by turning the edge of the bistoury up and directing it toward the pubis. Immediately after this was done a sponge was placed in the wound so as to prevent the escape of any of the fluid in the sac into the abdominal cavity, and then the adhesions between the bowel and the omentum were easily broken up. The protruded bowel and omentum were then enveloped with warm towels saturated with hot sublimated water (1 to 4,000). After persisting in the application of the warm sublimated towels for twenty minutes there was only a slight improvement in the appearance of the bowel, and, thinking it best to return it into the abdomen, this was accordingly done. There was no improvement in the appearance of the omentum, and it was transfixed at the neck of the sac with a large double catgut ligature, tied both ways, and the mass beyond the ligature cut off. The sac was then transfixed in like manner and cut off, and together with the stump of omentum stitched to the upper and lower edges of the ring and tightly closed so that no fluids could escape into the peritoneum. The wound was finally well irrigated, closed with catgut sutures, a small strip of sublimate gauze being inserted in the lower angle of the wound. Iodoform was then dusted over the field of operation, sublimated gauze, borated cotton, and bandages adjusted to protect the wound. The entire time occupied to the completion of the operation was just two hours. Succeeding the operation there was dangerous depression, but the patient gradually rallied under stimulants and artificial heat in the course of four hours, and slowly but steadily improved until her recovery was complete. The drainage from the wound was removed on the third day after the operation, and was clean and free from any appearance of pus. The day following the operation the patient's bowels moved copiously, and have continued to act regularly to this time.

She is now perfectly well, but is weakening, and may I say so expect to wait, a time.

The chief feature of interest in this remarkable case are the persistence of symptoms of strangulation for the unprecedented period of sixteen days and eighteen hours from the inception of the first symptoms of strangulation to the time of division of constriction; the persistence of anorexia, vomiting for fifteen days, the non-recovery of anything at all in the stomach; the complete inaction of the bowels during the whole period of illness; the remarkable escape of a portion of constricted bowel from death; the death of a portion of omentum, and, lastly, her reaction, after operation, and marvelous restoration, in view of her advanced age, to her usual good health.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 6, 1894.

A REMARKABLE INSTANCE OF THE *VIS MEDICATRIX*
NATURE.

IN the *Progrès médical* for September 15th Professor Severeano, of the University of Bukharest, in Roumania, gives a clinical history which, together with his comments, is of interest from several points of view. In the first place it shows a wonderful power of recovery from injury and disease; in addition it illustrates the difficulty that must often be met with in the medical treatment of royal personages; and, finally, it exemplifies a lack of exactness in clinical records that is somewhat confusing, inasmuch as in the opening paragraph the patient's age is given as sixty-five years, while in the closing paragraph he is said to have passed his eightieth year, and there is nothing in the history to indicate that the patient's ailments lasted fifteen years.

The patient was a prince, said to be of strong constitution and so robust and muscular that he was known in the neighborhood by the name of "the little Hercules." One morning, while descending a staircase, he slipped and in the endeavor to avoid falling contracted his muscles so powerfully that he felt a very sharp pain in the course of the right rectus femoris muscle, and at the same time the knee joint increased perceptibly in size. The prince was able to remain standing, until, with the aid of his servants, he could gain his apartments in the palace. Several physicians were consulted, and all were agreed that the patient ought to remain at rest or in bed and that cold applications should be made to the painful spot. The pain continued to be very sharp, the knee was considerably swollen, and fluctuation was very manifest. At the end of four or five days the author of the account proposed to puncture the collection of blood to which he attributed the tumefaction, but he found himself in a minority among the number of medical advisers, who persuaded the prince that such a procedure would be useless. Little by little the symptoms changed. The pain now became bearable, the swelling diminished day by day, and gentle massage was resorted to with limited success. On the fourth day occurred the return to Paris. His bed and walk about with confidence. Fifty days after the accident the prince went out long drives, but never has he completely lost the knee muscle. It was considered as a miracle in such a way that not within twenty of the back came upon the earth. The drive lasted two hours, and on his return the prince experienced intense pain in the painful region. He was immediately put to bed, and the next absolute rest was enjoined, together with the application of cold compresses to the painful part. His anorexia gradually was cured, and he obtained passage, not only to

the affected region, but of the whole extent of the limb. The whole limb then became swollen and oedematous and severe pain occurred in it, especially at its upper part, toward the groin, following the course of the blood-vessels. Then absolute rest was prescribed. Toward the evening of the same day there occurred very pronounced agitation, disordered movements of the heart, considerable anxiety and great difficulty of breathing, and a very painful point on the left side, accompanied by a rise of temperature to 104° F. and bloody expectoration. A consultation of several physicians was held immediately, and opinions were divided between pneumonia and pulmonary embolism of traumatic origin, a clot being thought to have formed in the popliteal vein at the point where the leg had rested on the crutch during the two hours' drive. In the course of a few hours this grave condition subsided, the temperature fell to normal, and of the whole disquieting picture there remained nothing but embarrassment of breathing and a slight bloody expectoration. The majority of the physicians consulted considered the trouble to be pneumonia, and accordingly digitalis was prescribed, together with opiates, a blister, and the most absolute repose. A few days later all the unpleasant phenomena disappeared, and the prince had completely recovered, except for some embarrassment in the movements of the knee and a little pain. Gradually these relics also disappeared, and the prince, whose age at this stage of the history is given as more than eighty years, was able to take long walks without the least pain or stiffness of the knee.

The author closes with the reflection that one lesson to be learned from such a case is that whenever a physician has to deal with a royal patient he is unable to do his duty conscientiously, for not only do the *attachés* of the court throw obstacles in his way, but often even his professional brethren forget their capacity as physicians and assume that of the courtier. This, he says, is why princes are almost always worse taken care of than water-carriers, and are, so to speak, victims of their social position.

MINOR PARAGRAPHS.

MEDICAL BOOKS AND MEDICAL JOURNALS.

A LETTER from Messrs. William Wood & Co., the well-known publishers of medical books, which we publish in this issue shows that there is really less divergence of views between medical-book publishers and the editors of medical journals than might be supposed as to the methods by which the latter should acquire their means of giving their readers an abridgement of the books published from time to time. We need say, however, that we are not about the desirability of a system where the books should pay the transport of the matter. The correspondence sent to the Editors of journals is getting such a large amount of the great number of letters, and reports that it would be a tedious task on our part to read and compare with the published papers, and to publish the papers in question. There are two considerations that must be taken into account in connection with this proposition. The first is that the Editors are to be treated as an impartially as possible, and the second is that the Editors are to be treated as impartially as possible. The second

will appear from a reversal of the proposition; if it is a hardship for a publisher to meet these charges on one book sent to a multitude of journals, it would be a like hardship for any one journal to meet them on the multiplicity of books published. Moreover, the publisher knows what sort of book he is sending out—knows how much he is warranted in expending on it—whereas the journal has no means of knowing in advance whether or not a book sent to it is worth the charges to be paid before it can be received. In addition, the alternative of declining to receive the book in some instances would be ungracious; it would be tantamount to saying to both publisher and author: "Your book is not worth the express charges on it."

DR. CONAN DOYLE.

THE recent arrival in New York of this distinguished member of the medical profession of Great Britain—for we must still look upon him as belonging to our profession, although his remarkable success as a writer of fiction has led him to forsake a medical career—will move American physicians to even greater interest than they have heretofore taken in his stories, especially as a volume of them soon to be published here will, we are informed, deal largely with matters incident to medical experience, consisting indeed of what may be termed medical stories. Many physicians have achieved distinction in general literature, and when one does so it is a matter of pride with all his professional brethren. This feeling among us is not in the least impaired by the fact that in this instance the writer, though of our kindred, is not of our own nationality. Dr. Doyle may be sure of a hearty reception at the hands of Americans, and especially at those of American doctors.

ITEMS, ETC.

The Society of Medical Jurisprudence.—The special order for the next meeting, on Monday evening, the 8th inst., is a paper on Examination of the Nasal Cavities in Life Insurance Risks, by Dr. Edward J. Bermingham.

The New York Neurological Society.—The special order for the last meeting, on Tuesday evening, the 2d inst., was a paper on Cortical Localization of Cutaneous Sensations, by Dr. Charles L. Dana.

Changes of Address.—Dr. William H. Dukeman (Los Angeles, Cal.), to No. 104 South Spring Street; Dr. Eugene C. Gehring (St. Louis), to Westminster Place and Vandeventer Avenue; Dr. Maurice L. Healey, to No. 153 East Thirty-sixth Street; Dr. Charles A. Powers, from New York to Denver.

Marine-Hospital Service.—*Official List of the Changes of Stations and Dates of Medical Officers of the United States Marine Hospital Service for the Four Weeks ending September 22, 1894:*

FESSENDEN, C. S. D., Surgeon. Granted leave of absence for thirty days. September 12, 1894.
MURRAY, R. D., Surgeon. To proceed to Beaufort, S. C., on special duty. September 20, 1894.
BALHACHIE, P. H., Surgeon. Detailed to represent the service at the meeting of the American Public Health Association. September 21, 1894.
VANHANT, JOHN, Surgeon. Granted leave of absence for thirty days. August 30, 1894.
HUTTON, W. H. H., Surgeon. Relieved from Quarantine Inspection duty and ordered to rejoin his station, Detroit, Mich. September 12, 1894. Granted leave of absence for thirty days. September 20, 1894.

SAWTELLE, H. W., Surgeon. Granted leave of absence for five days. September 14, 1894.

GASSAWAY, J. M., Surgeon. Granted leave of absence for one day. September 17, 1894.

BANKS, C. E., Passed Assistant Surgeon. To report at the bureau for temporary duty. September 10, 1894. Detailed to represent the service at the meeting of the American Public Health Association. September 21, 1894. Relieved from temporary duty at the bureau, and directed to rejoin his station (Portland, Me.). September 22, 1894.

CARMICHAEL, D. A., Passed Assistant Surgeon. Granted leave of absence for thirty days without pay. September 6, 1894.

WHITE, J. H., Passed Assistant Surgeon. Detailed as chairman of a board to locate a quarantine station, South Port, N. C. September 13, 1894.

BRATTON, W. D., Passed Assistant Surgeon. To proceed to Wilmington, N. C., for duty. August 27, 1894.

WERTENBAKER, C. P., Passed Assistant Surgeon. To assume command of the Delaware Breakwater Quarantine Station. August 27, 1894.

STIMPSON, W. G., Passed Assistant Surgeon. To proceed to Port Townsend, Wash., and assume command of the Quarantine Station. September 10, 1894. Granted leave of absence for five days. September 15, 1894.

BROWN, B. W., Passed Assistant Surgeon. To report at Washington, D. C., for duty. August 31, 1894. Detailed as Acting Chief Clerk, Marine Hospital Bureau. September 21, 1894.

HOGGINTON, E. R., Passed Assistant Surgeon. Granted leave of absence for seven days. September 19, 1894.

EAGER, J. M., Assistant Surgeon. To proceed to Mobile, Ala., for temporary duty. September 11, 1894.

STRAYER, EDGAR, Assistant Surgeon. To proceed to Pittsburgh, Pa., for duty. August 31, 1894.

PROCHAZKA, EMIL, Assistant Surgeon. To proceed to Detroit, Mich., for duty. September 10, 1894.

Promotion.

ROSENAL, M. J., Assistant Surgeon. Commissioned as Passed Assistant Surgeon. September 1, 1894.

Army Intelligence. *Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 23 to September 29, 1894.*

BROOK, BENJAMIN, First Lieutenant and Assistant Surgeon, is relieved from duty at Camp Pilot Butte, Wyoming, and ordered to Fort Canby, Washington, for duty.

RAYMOND, THOMAS H., First Lieutenant and Assistant Surgeon, is removed from duty at Fort Canby, Washington, and ordered to Fort Riley, Kansas, for duty.

PHILLIPS, JOHN L., Captain and Assistant Surgeon, is ordered to report in person to the commanding officer, Fort Walla Walla, Washington, for duty at that station, the command to duty at Fort McKim, Wyoming, being revoked.

Society Meetings for the Coming Week:

Monday, October 8th: New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medical Historical Society (quarterly); New York Academy of Sciences (Section in Chemistry and Technology); Boston Medical and Surgical Society; New York (private); Boston Society for Medical Improvement; German-Speaking Society of Boston; Burlington, Vt. Medical and Surgical Club; Norwich, Conn. Medical Society (quarterly).

Tuesday, October 9th: Tri-State Medical Society of Alabama, Georgia, and Tennessee (third day)—Atlanta, New York

Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Albany (annual), Chenango (tri-annual), Greene (semi-annual—Cairo), Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, Schoharie (semi-annual), Tioga (quarterly—Owego), and Wayne (semi-annual), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Bergen and Cumberland (semi-annual), N. J., County Medical Societies; Litchfield, Conn., County Medical Society (annual); North-western Medical Society of Philadelphia; Baltimore Gynecological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

Wednesday, October 10th: Tri-State Medical Society of Alabama, Georgia, and Tennessee (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany and Allegany (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), Middlesex South (Cambridge), and Plymouth (special), Mass., District Medical Societies; Philadelphia County Medical Society; Kansas City, Mo., Ophthalmological and Otolological Society.

Thursday, October 11th: Vermont State Medical Society (first day—Montpelier); Tri-State Medical Society of Alabama, Georgia, and Tennessee (third day); New York Academy of Medicine (Section in Pediatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, October 12th: Vermont State Medical Society (second day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Medical Society of the Town of Saugerties, N. Y. (anniversary); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn.

Saturday, October 13th: Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Letters to the Editor.

MEDICAL PUBLISHERS AND MEDICAL JOURNALS.

New York, September 29, 1894.

To the Editor of the New York Medical Journal.

SIR: In your Journal of the 22d inst. we noticed an editorial on Medical Publishers and Medical Journals, which you take the very common, and we might express, view of most editors respecting books sent by publishers for review to their journals. We very much wish editors would seriously accept the fact stated by you, that publishers send required their books for their own purposes, and not as a means of advertisement. But it is unfortunately so. There is no question whatever of a number of manuscripts or papers sent, and editors are usually too busy pleased to give weight to such demands for editorial exposure to their journals. On the other hand most men of the medical profession look to the journals like the *Reform Medical* and other respectable journals, including your

own, to keep them posted as to new publications and their merits; and, while we do not know that the *New York Medical Journal* professes to supply this sort of information, most medical journals do so only so far as books are sent them gratuitously by publishers. Would not the editor's proper stand be to give his subscribers prompt and sufficiently full notices or reviews of all books properly belonging to his field, without regard to whether the publishers sent them to him or not? As we look at it, it should be a matter of indifference to the editor whether the publisher received any benefit from the reviews given or not, his whole concern being the interests of his patrons, the subscribers to his journal. The question of costs in carrying out such a practice is a legitimate one in the expenses of the journal. If, then, publishers send their books to editors, carriage to be collected, the editor has a perfect right to decline to receive the book if he does not consider that its review would be of value to his subscribers, but if otherwise, the opportunity is afforded him of obtaining a book he wishes to review at a merely nominal cost, the publisher well understanding that the reception of the book imposes no obligation upon the editor to review it in any way other than as its merits may in his opinion warrant.

There are over two hundred and fifty medical journals now published in this country, and it has become simply an impossibility for publishers to send copies of their new books to all of them. If any publishers, as in the case referred to by you, sending books for review, in the endeavor to comply with the mistaken idea of a majority of editors that they would otherwise be lacking in courtesy, seek to lighten the burden by permitting editors to pay the freight charges on books sent, it would appear to us short-sighted to decline to pay such charges, which, while in the aggregate burdensome to the publishers, amount to a mere pittance to editors in comparison with the cost of books which would otherwise have to be purchased to meet the just expectations of journal subscribers.

WILLIAM WOOD & CO.

SYPHILIS AND MARRIAGE.

ST. PAUL, MISS., September 20, 1894.

To the Editor of the *New York Medical Journal*:

SIR: For the purpose of securing reliable statistics on the subject of the marriage of syphilitics, I desire to enlist the assistance of those of your readers who have had experience which will be of value in determining the period when this disease ceases to be communicable and inheritable. I shall, therefore, esteem it a great favor on the part of any physician who will send me answers to the following questions, and due credit will be given in a future publication to those who desire to aid me in this work.

1. What is the latest period from the date of the initial chancre that you have known the disease to be communicated by a patient who has been from the first under your observation?

2. What is the latest period from the date of the initial chancre that you have known (or a syphilitic man or a syphilitic woman) to become the parent of a syphilitic child?

3. Have you ever known a child born either contracted or transmitted during a brief period from the date of the initial chancre to an individual who has been constantly under your observation since that time?

In my answers to these questions I should like a great benefit to be derived from the results of the treatment that has been proposed. I hope that the results of the experience of a large number of observers will become a fairly reliable canon as to the time when we can safely permit our syphilitic patients to marry.

BENJAMIN FORTUNE, M. D.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Seventh Annual Meeting, held in Toronto, Ontario, September 19, 20, and 21, 1894.

The Second Vice-President, Dr. GEORGE F. HULBERT, of St. Louis, in the Chair.

An Address of Welcome on behalf of the local medical profession was delivered by Dr. JAMES THORBUEN, which was responded to by Dr. HULBERT.

The Incision in Abdominal Surgery—Methods and Results.—A paper thus entitled was read by Dr. J. HENRY CARSTENS, of Detroit. The author summarized as follows: 1. With a small, narrow-bladed, sharp knife make a clean incision through the skin, of the necessary length, and with another sweep or two cut through the linea alba, muscle, etc. Lift the peritoneum with your fingers, open it, and enlarge the incision. The use of the forceps to lift the tissues, or the grooved director is unnecessary. 2. In closing the abdominal incision use animal ligature, kangaroo tendon, or catgut. First carefully bring together the peritoneum in a running stitch, then the transversalis fascia, and the rectus if the incision is through this muscle. Then carefully bring together, edge to edge, the tendinous insertion of the oblique muscles. The fat and loose cellular tissue above can be brought together in one or two tiers, according to thickness. Bring the skin together carefully with Marcy's cobbler stitch, thus burying all the sutures. 3. Then seal with collodion, and, if everything connected with the operation has been carefully aseptic, absolute primary union will take place, and the different layers of the abdominal wall will have been brought together as nearly as possible as they were in the first place, and no hernia will result. 4. In cases of extensive umbilical, ventral, or other hernias, it is best to bring the peritoneum together with an over-and-over stitch of kangaroo tendon or catgut; to make a flap-splitting operation of the ring, which is brought together with silkworm gut or silver wire, which are buried; and then to unite the fat and skin with the buried animal suture.

Plastic Surgery in Gynæcology.—Dr. JOSEPH PRICE, of Philadelphia, read a paper on this subject in which he said that the practice of surgery in all its branches required a mechanical trend and an ability to devise means to accomplish a given end. In order to mend a perineum intelligently, the mechanism of labor must be understood. In cases of serious pelvic invasion, with accompanying lacerated cervix, it was often better, or imperative, first to do the pelvic operation, and to follow this at another time with the cervical repair. The author condemned the plan advised by some of performing internal and external operations at one sitting. Perineal tears always occurred at certain parts of the perineal structure. These tears were either lateral, under the ramus of the pubes, or central, extending from vagina toward the rectum. The tears toward the rectum tended to run around it rather than through it, owing to the differentiation of structure in those two pubes. The tears of the vagina were always from within outward, from above downward, and therefore the external or skin operations for perineal lacerations were essentially unscientific procedures. All operations for restoring the integrity of these parts should be done in the line of their destruction, and therefore from within outward and from above downward. When the skin of the perineum was involved, mending of this was merely a cosmetic

procedure. The cosmetic element too often predominated in many of the so-called perineal devices. The silkworm gut with shot was by far the best material to be used for sutures. As little tissue as possible was to be included within the ligature, and strangulation was to be avoided.

The Care of Pregnant Women.—Dr. W. B. DEWEES, of Salina, Kansas, read a paper thus entitled. The paramount duties of the obstetrician in the study and care of pregnant women might be classified as follows: 1. To discover if the patient was actually pregnant. 2. To determine positively if the pregnancy was uterine or normal, as distinguished from extra-uterine pregnancy. 3. To carefully note the pregnant woman's history, including her age, primiparity or multiparity, environments, station in life, general condition of health, and period of gestation, as well as her dress, food, drink, and habits of life. To make repeated examinations of the urine. 4. To make a physical examination for the purpose of accurately determining the diameter of the pelvic straits; the symmetry and size of the bony outlet; the integrity, condition, and position of the vagina, uterus, and other intrapelvic viscera and adjacent structures; the state of the abdominal muscles; the presence or absence of hernia, varicose veins, tumors, etc.; the shape, size, and condition of the breasts and nipples; and the condition of the heart, lungs, stomach, bowels, etc. 5. To observe the state of the fetus, its strength and viability, as well as the implantation of the placenta. The thoughtful obstetrician would advise his patient as to the requisite *régime*. The consciousness of his future duty would impell him to insist upon: 1. Absolutely regular hours and wholesome environment. 2. Plain but nutritious and wholesome food and drink, principally composed of fresh lean meats, fresh fruits, pure milk, and distilled water. 3. A proper amount of exercise, by walking or light labor on foot and maintaining the erect posture. 4. An open condition of the bowels and skin, which was to be chiefly maintained by proper diet, exercise, bathing, the wearing of flannels, warm, low-heeled shoes, and loose garments, and in rare cases the proper use of laxatives and hot-water enemas.

Appendicitis.—Dr. GEORGE S. PECK, of Youngstown, Ohio, read a paper in which he gave brief reports of five cases.

The W. G. McDONALD of Albany, contributed a paper on appendicitis, based on a clinical study of eighty-four cases. He said that three important landmarks had been established: 1. That practically all inflammatory processes in the right ilio-cæca arose from the appendix. 2. That practically the appendix is always intraperitoneal, and that any operation undertaken for appendicitis that did not involve opening the peritoneum was false in conception. 3. That idiopathic peritonitis did not occur in any cases diagnosed as such were really cases of perforating appendicitis. The author classified the varieties as acute perforating, fulminating appendicitis with general peritonitis; acute suppurating appendicitis with local plastic peritonitis and abscess; and subacute appendicitis, variously termed enteric chronic, smouldering, or obliterating appendicitis, or append the case. The perforation occurred very much earlier than was commonly believed. Acute suppurating appendicitis with local peritonitis presented the most favorable field for operation during the attack. The removal of the appendix was to be undertaken with great care, so that when it lay in the wall of an abscess cavity. The fluid around it should not come into contact with the rest of the abdomen. But if repeated attacks occurred, an operation during a remission was demanded. The results of these cases were most favorable.

Dr. James Hickey of Philadelphia, followed with a paper on mental inequities.

Book Notices.

2 *Practical Treatise on Orthopædic Surgery*. Designed for the Use of Students and Practitioners. By JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery, University of Pennsylvania, etc. Illustrated with Two Hundred and Eighty-five Woodcuts. Philadelphia: Lea Brothers & Co., 1894. Pp. viii-17 to 446. [Price, \$4.]

This handsome and well-printed volume gives a useful compendium of the art of orthopaedic surgery, based on the author's experience and on recent literature. An examination of its pages emphasizes the fact, otherwise evident, that orthopaedic practice is rapidly emerging from its stone age. In the treatment of Pott's disease jackets are relegated to a secondary position, and the steel antero-posterior support is preferred, except for disease in the lower lumbar region with lateral deviation, though their value, when more perfect means are not available, is generously recognized.

In another chapter the author uses these decided words: "The plaster-of-Paris jacket, myotomy, tenotomy, and forcible restoration under anesthesia have, in the writer's opinion, no place in the treatment of lateral curvature." Corrective exercises and a light steel supporting apparatus are warmly commended. The ambitious desire, occasionally noticeable, to annex orthopaedic practice to the domain of operative surgery, finds little encouragement in the views registered in this volume, whose author remarks that, while the orthopaedic practitioner must be physician, mechanician, and surgeon, yet "measurement and the application of mechanical appliances will demand the greatest attention." In general the severer operations are called for only where conservative treatment has been imperfect or omitted, and in exceptional cases. Laminectomy for Pott's paraplegia is seldom indicated, and should be reserved "until complete sensory paralysis has resisted all [conservative] methods of treatment." "Traction by extension and counter-extension is the keynote of correct surgical treatment in hip-joint disease." For this purpose, the long traction splint is preferred, and if it is properly used excision is very rarely indicated. The author justly deprecates the senseless procedure of striking the heel to elicit hip tenderness as an aid to diagnosis.

A short chapter is devoted to arthritis deformans, which is said in its acute form to resemble rheumatism, and the reader is referred to two cases, pages 104 and 105, of a case of arthritis deformans, a disease as different as possible from both of the former affections, since the joints are not affected; it is, moreover, characterized by extreme chronicity. In the chapter on congenital hip luxations Paei's method of manual reduction, the most promising of recent advances in the treatment of this troublesome disorder, is not mentioned. There is no allusion to the joint affections of scorbutus, which are exceedingly liable to be mistaken for orthopaedic disease. The style of the work is for the most part simple and clear, the views are moderate and sane, and the author is to be congratulated on his successful combination of scientific and popular treatment of a troublesome complaint.

Lehrbuch der Haut- und Geschlechtskrankheiten. Von Alfred Kaposi, Professor der Syphilis in der Kaiserl. Universitäts- und Landesheilkunde in Wien. Max Perle in Deutscher Sprache. Theil: Geschlechtskrankheiten. Mit 24 Abbildungen im Text und einer farbigen Tafel. Leipzig: Georg Thieme, 1894. 77 u. 100 S.

(1) The body must always be fairly straight, with the arms, legs, and feet pointing out to the sides. The

believes with the large majority in their separate specificity, the cause of which, however, has only been demonstrated for the last. The author's views are moderate and free from dogmatism; he points out that there is no sharp line of demarcation in time between the secondary stage of syphilis with simple hyperplasias, and the gummy tumors of the tertiary, since the latter may appear before the hyperplastic reaction has subsided. These hyperplastic tissues, including the corresponding efflorescences, are contagious, provided a lesion of the skin or mucous membrane, however slight, is exposed to them. The gummy growths are not contagious; neither are the secretions (except the semen) nor the blood serum, though blood corpuscles and bits of tissue are. Syphilitic virus soon loses its virulence outside the body. The contagiousness of syphilis is greatest in the earlier stages, and diminishes with the duration of the disease, but no definite time can be fixed when it positively ceases. Marriage may be permitted in favorable cases one or two years after the last manifestations, or four years after the initial lesion. The syphilitic is proof against fresh infection during the first two or three years, the most contagious period; later, reinfection is possible, but rare. This possibility of reinfection is the best proof of the curability of syphilis.

The author recommends the early extirpation of the primary lesion, stating that this treatment is followed by milder secondaries. After the appearance of constitutional symptoms a course of inunctions of mercury is to be begun, and is to be repeated two or three times at intervals of several months, with varying treatment or rest in the intervals, according to the individual peculiarities of the case in hand. Iodide of potassium is to be prescribed for the tertiary manifestations and also for malignant cases and early joint pains.

BOOKS, ETC., RECEIVED.

Jahrbücher der Hamburgischen Staatskrankenanstalten.
Herausgegeben von den Aerzten dieser Anstalten unter Redak-
tion von Professor Dr. Th. Rumpf, Direktor des neuen allge-
meinen Krankenhauses Hamburg-Eppendorf. Band III. Jahr-
gang 1891-1892. Mit 46 Abbildungen im Text und 13 Tafeln.
Hamburg und Leipzig: Leopold Voss, 1894. Pp. xxxvi-517.
[Preis, M. 20.]

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Second Edition, enlarged and thoroughly revised. With Ninety-four Illustrations, of which Seventeen are Colored. Philadelphia: Lea Brothers & Co., 1894. Pp. xi-13 to 471.

Laboratory Manual of Elementary Chemical Physiology and Urine Analysis. By John H. Long, M. S., Sc. D., Professor of Chemistry, and Director of the Chemical Laboratories in the School of Medicine and Pharmacology of Northwestern University. With Numerous Illustrations. Chicago: E. H. Colegrove & Co., 1904. Pp. 300.

Directions for Laboratory Work in Bacteriology. For the First-Year Medical Classes in the University of Michigan. By F. C. CAMPBELL, Sc. D., M. D., Junior Professor of Hygiene and Preventive Medicine. Ann Arbor, Mich.: George Wahr, 1934. Pp. 110 + 200. Price, \$1.00.

The new Heart Preparation, Structure and Treatment,
By George William Balfour, M.D. (St. And.), LL.D. (Ed.),
F.R.C.P. (Ed.), F.R.C.S. (Ed.). Physician to the Royal
Institution, Edinburgh. (New York and London: Macmillan
and Co., 1914. Pp. 110. Price 5s.)

The following information of the specimens are reported in the
 Table of the Appendix. The specimens are all from the
 same locality, and the same locality is the same locality.

1893. Par Bourneville, médecin de Bicêtre. Avec la collaboration de M. Boncourt, M. Cornet, M. Lenoir, M. Jules Noir et M. P. Sollier. Volume XIV. Avec 89 figures dans le texte et un plan. Paris: Félix Alcan, 1894. Pp. lxxiii-4 to 375. [Publications du *Progrès médical*.]

Prescribing and Treatment in the Diseases of Infants and Children. By Philip E. Muskett, Late Surgeon to the Sydney Hospital, etc. Third Edition, revised, enlarged, and rearranged. Edinburgh and London: Young J. Pentland, 1894. Pp. xvii-384.

Transactions of the Medical Society of the State of New York for the Year 1894.

The President's Address delivered before the American Laryngological Association at its Sixteenth Annual Congress. By D. Bryson Delavan, M. D. [Reprinted from the *New York Medical Journal*.]

Gonorrhœa of the Rectum. By Henry Jacobson, M. D., St. Louis. [Reprinted from the *American Medico-surgical Bulletin*.]

A New and Distinguishing Sign of Latent Aneurysm of the Aorta. By William C. Glasgow, M. D., St. Louis. [Reprinted from the *New York Medical Journal*.]

A New and Perfected Enteric Pill. By Louis Waldstein, M. D. [Reprinted from the *New York Medical Journal*.]

The Production of Diseases by Sewer Air. By A. Jacobi, M. D. [Reprinted from the *New York Medical Journal*.]

Climatic Therapeutics in the Treatment of Pulmonary Tuberculosis. By Edward O. Otis, M. D. [Reprinted from the *Boston Medical and Surgical Journal*.]

Treatment of Strictures of the Male Urethra. By Julius Rosenstirn, M. D., San Francisco. [Reprinted from the *Journal of the American Medical Association*.]

A Word for the General Practitioner. What the General Practitioner should Know about Eye Diseases. By George Keiper, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Clinical Contribution to the Surgery of the Appendix Vermiformis—Right Inguinal Hernia—Operation—Recovery. By William Davis Foster, M. D., Kansas City. [Reprinted from the *Medical Arena*.]

Dr. Friedrich von zur Mühlen: Ueber zwei neue Arzneimittel, das Tolypyrin und Orthotolypyrin. [Sonderabdruck aus der *Allgemeine medicinische Central-Zeitung.*]

Inebriety as a Disease, Analytically Studied. By R. M. Phelps, M. D. [Reprinted from the *Medical News*.]

Reports on the Progress of Medicine.

GENERAL MEDICINE.

By JOHN WINTERS BRANNAN, M. D.

The Strychnine Treatment of Pulmonary Consumption.

—Some two years ago we had occasion to review in the columns of the *Journal*¹ an interesting book by Dr. Thomas Mays, entitled *Pulmonary Consumption; a Nervous Disease*. In that work Dr. Mays presented a strong argument in favor of the nervous origin of pulmonary phthisis. He believes that in the great majority of cases the pulmonary disease is the direct result of primary disease and debility of the pneumogastric nerves. Acting on this belief, Dr. Mays has employed strychnine in the treatment of the disease, and records his results in

the *American Medico-surgical Bulletin* of May 15th. He is convinced that, next to physical rest and nutritious food, strychnine is the most important agent in the treatment of pulmonary consumption. Large doses must be given, beginning with a thirty-second of a grain four times a day, and increasing the daily amount an eighth or a quarter of a grain every eighth day until the limit of toleration is approached. In one case a sixth of a grain was given four times a day during a period of sixty days. According to the author no deleterious action of the drug was observed. Neither albuminuria nor diabetes was ever produced. In some patients, indeed, who suffered from albuminuria when they first came under observation, the albumin disappeared entirely under the strychnine treatment.

In considering the therapeutic influence of the drug on the various symptoms of phthisis, Dr. Mays states that it modifies favorably the cough and expectoration, the dyspnea, the loss of appetite, the nervousness and sleeplessness, the vomiting, the constipation, the pain in the chest, the cardiac weakness, and also acts as a valuable adjunct in combating the anemia which is so common an accompaniment of the phthisical condition.

The author believes that the useful action of strychnine on all these symptoms is accomplished through the medium of the pneumogastric nerves, and he also believes that its immediate action on the pulmonary disintegration is just as pronounced, and is brought about in the same way. His therapeutic observations, therefore, form another link in the chain of evidence which goes to prove that pulmonary consumption is primarily a disease of the nervous system.

The Symptomatic Tachycardia of Tuberculosis.—The tachycardia of chronic pulmonary phthisis is the subject of a monograph by E. Bezançon in the *Revue médicale* of January 10th. This paper is of especial interest when taken in connection with the views of Dr. Mays, referred to above. Bezançon's observations are based upon four cases of pulmonary tuberculosis, in which the tachycardia became more and more marked, until the patient finally died from exhaustion of the heart muscle. Autopsies were obtained, and in every case one or the other vagus nerve was found compressed by tubercular bronchial glands. These findings might seem to lend confirmation to Dr. Mays's theories, but Bezançon does not view them in that light. Dr. Mays would argue that the pulmonary process was secondary to the compression of the vagus, whereas Bezançon regards the involvement of the nerve as simply an accidental result of the widely distributed tuberculosis.

Bezançon has collected a large number of other cases in which tachycardia developed in the course of pulmonary tuberculosis, and autopsy revealed compression of the vagus. In some of these cases, and in one of the author's own cases, histological examination of the compressed nerve showed destruction of the axis cylinders or fragmentation of the myelin, thus furnishing a ready explanation of the tachycardia. In the majority of the cases, however, the nerve tissue was entirely unaffected, or simply gave evidence of slight reaction. In these latter cases, as Bezançon remarks, we should expect to find a slowing rather than an acceleration of the heart's action. There are also cases reported in which tachycardia was associated with pulmonary tuberculosis, and yet no compression whatever of the vagus was found on autopsy. Tuffier's views have been advanced to explain the cardiac symptoms in these cases. An important role is assigned by Bezançon to the autonomic nervous system in the tubercular process. The action may act in two ways: either by setting up a tachycardia of the vagus, such as is found in other chronic diseases, or by lowering the vagus's power. Attention is called to the fact that Bezançon has noticed from tuberculosis a condition which he calls *cardiac*

which acts as a vasodilator. Arloing has demonstrated the same property in the products of the *Staphylococcus pyogenes* and other bacteria which are found so abundantly in tubercular cavities. As it is a matter of frequent observation that the blood pressure is lowered in tuberculosis, Bezançon's theory seems to be supported by the clinical facts. It only remains to be shown that lessened arterial pressure produces tachycardia, and, according to Bezançon, this has already been proved by Marey, who first established the physiological law that the heart beats more rapidly as the resistance in the peripheral circulation is diminished.

The Pathology and Treatment of Hæmoptysis.—Dr. Arthur Foxwell discusses the pathology and treatment of hæmoptysis in the *British Medical Journal* of April 21st.

Hæmoptysis may be secondary to cardiac weakness or it may be due to primary disease of the lung. The hæmorrhage occurring in cardiac disease is the result of thrombosis of the pulmonary arterioles caused by feeble circulation. The thrombosis produces an infarct and the hæmorrhage itself arises in the infarcted area. The pulmonary arterioles being non-anastomosing terminal vessels, the portion of lung beyond the occluded vessel is deprived of all blood from the pulmonary artery, as well as of the pressure which is derived from the pulmonary artery. The infarcted area is now only supplied with blood from the bronchial, œsophageal, and other small vessels; these are sufficient to keep the area full, but have not enough pressure to maintain a proper flow against the reflex pressure from the veins, which pressure is maintained by the other—unoccluded—branches of the pulmonary artery. Stagnation results; the affected tissues, including the walls of the involved vessels, necrose, and hæmoptysis often follows. It is evident that the hæmorrhage does not occur at the moment of the occlusion, but only after an interval during which vascular degeneration has taken place, allowing extravasation of blood. The amount of blood lost is not usually large, and a fatal issue directly from the bleeding is extremely rare.

Excessive strain of an otherwise healthy but weak heart may bring about a similar condition of things. Exhaustion of the right ventricle reduces the pressure in the pulmonary artery, and at the same time exhaustion of the left ventricle impedes the flow from the lungs into the left auricle; slowing and stagnation of the blood in the lungs ensue perhaps over a wide area, or, by inducing thrombosis, over two or three smaller areas, and in a day or two hæmoptysis arises. It is noteworthy that the spitting of blood never occurs immediately after the exertion.

Hæmoptysis due to primary disease of the lung usually occurs in association with the tubercle bacillus. As the author points out, there is no indissoluble bond between the spitting of blood and the bacillus of tuberculosis. The majority of cases of tuberculous phthisis run their course without hæmoptysis. Spitting of blood may also occur in emphysema and in fibroid phthisis, diseases in which bacilli play no rôle whatever. Nevertheless, hæmoptysis and tubercle are very closely related. Dr. Foxwell considers that they depend upon a common cause, the "tendency to hæmorrhage of the body walls, which sometimes is a tendency to it through vascular weakness, in places where the circulation is feeble. Where the catarrhal tendency and the bacille consumption both exist, there we find a common basis of depressed action; such a source of hæmorrhage as the surface of the bronchial wall, the end of the surface of the bacillus."

All hæmoptyses in fibroid disease, all hæmoptyses from catarrhal degeneration of a vessel or from the action of the bacillus, arise from hæmorrhage and hæmorrhage is by the loosening of all from the removal of energy and stability of the cells.

The treatment of hæmoptysis may be considered under two heads, according as the hæmorrhage is secondary to cardiac failure or is due to primary lung disease.

The indication in cardiac hæmoptysis is to prevent a repetition of the thrombosis. To effect this we have to strengthen the heart by horizontal rest and such tonics as strychnine and digitalis. The author finds hypodermic injections of strychnine, in the doses in which we are accustomed to give it by the stomach, to be the most efficacious of all means for stimulating the weakened muscle of the heart.

The indications in hæmoptysis due to primary lung disease are to quiet the action of the heart, to keep the blood in the systemic circulation and thus produce anæmia of the lungs, and to increase the coagulability of the blood. The first indication may be met by venesection if the pulse be strong, the individual full-blooded, or if venous congestion exist. An icebag to the præcordia also acts as a powerful cardiac depressant.

The blood may be kept in the systemic circulation by large doses of nitrites which relax the systemic arterioles. The constant supply of small portions of food will keep up a constant demand for blood in the alimentary tract. Ligatures may be applied to the extremities to prevent the blood reaching the right heart. Leeches to the anus or hot foot baths are also useful.

The coagulability of the blood is supposed to be increased by gallic acid and calcium chloride; hence it is well to give these drugs.

Of all the measures for the relief of hæmoptysis the induction of vomiting has the strongest clinical value. Hydragogue purgatives are also of great service. Of these, calomel possesses a double virtue, as mercury is one of the best drugs we have for lowering arterial tension. The great thirst which often attends prolonged bleeding may be relieved by sucking small pieces of lemon, as fluid drinks are to be avoided.

Finally, morphine should always be kept in mind, to maintain that "vascular serenity" which is an absolute essential in the treatment of hæmoptysis.

Affections of the Right Side of the Heart.—In the same journal of June 9th Dr. Thomas K. Bradshaw lays stress upon the importance of attending to the condition of the right ventricle in the study of cases of valvular heart disease. That affections of the left cavities of the heart seem to be more important than those of the right side is the natural consequence of the fact that disease on the right side is seldom primary. Its distinctive signs also are commonly overshadowed by those of the conditions with which it is associated. The author contends, however, that in most cases of valvular heart disease compensation is chiefly effected by means of an increased activity of the right ventricle, and that it is the failure of the latter that precipitates the onset of the common symptoms of backward pressure in the veins. So long as the right ventricle can propel the blood the patient may continue to enjoy immunity from urgent symptoms, in spite of extensive valvular disease on the left side. The circulation in such a patient resembles the circulation in the fish. In the fish the blood is driven by the *one ventricle* through the gills, whence it is aerated, and the *vena tergo* suffices to drive it onward into the aorta, and so throughout the systemic circuit. In like manner, when there is great destruction at the mitral valve, at times, the onward movement of the blood in the system can be entirely dependent on the *vena tergo* on the right side of the heart, and in a certain sense the left ventricle becomes a mere channel for the blood to flow through.

The most frequent form of valvular disease on the right side of the heart is tricuspid regurgitation. We meet with it associated with mitral disease, disease of the aortic valve, or with isolated affection of the tricuspid orifice.

This regurgitation through the tricuspid orifice is due to the safety-valve action of the heart by which, when the right ventricle is overdistended, the chordæ tendinæ pull upon certain parts of the tricuspid valve in such a way that it no longer closes during systole. Thus a certain amount of regurgitation takes place until the ventricle has got rid of the excess of blood it contained. When more or less permanent dilatation has arisen from excessive internal pressure the same mechanism comes into play. We then see the symptoms of impeded circulation in the veins, and we may often distinguish a systolic murmur in the tricuspid area. When a mitral murmur is present it may be difficult to decide whether a tricuspid murmur also exists; but the latter may often be differentiated by its having a point of maximum intensity near the sternum.

Although increase of pressure in the pulmonary artery usually takes effect on the tricuspid valve, in some cases its action is manifested on the pulmonary valves. Probably pulmonary regurgitation from this cause would be more frequent than it is were it not for the safety-valve action of the right ventricle. The author narrates a case in which two murmurs were heard in the pulmonary area—the one systolic, the other diastolic. The systolic murmur was loud, had the rough quality of a direct murmur, and was conducted toward the left clavicle; the diastolic murmur was soft, was heard best in the second left intercostal space close to the sternum, and was also audible in the third space and faintly in the first. There was no history of rheumatism. A second case given by the author seems to have been one of rheumatic endocarditis affecting the tricuspid valve. A systolic murmur was heard all over the præcordia, with the point of maximum intensity in the tricuspid area. The murmur diminished in intensity in passing to the mitral area, and was not heard in the back.

In the foregoing instances the murmurs pointed to organic disease on the right side of the heart, but generally murmurs in the pulmonary region are to be differently interpreted. Hæmic murmurs are always systolic, and their character is usually easily recognized. A diastolic murmur is sometimes heard in this situation, when the other conditions make it unlikely that pulmonary regurgitation is present. The author relates a case in point in which the diagnosis was doubtful, but the absence of a pulmonary systolic murmur led him to exclude pulmonary regurgitation, since, according to Dr. Balfour, in all cases of pulmonary regurgitation the murmur has been double. A systolic murmur was heard at the aortic cartilage, and Dr. Bradshaw finally concluded that the regurgitant murmur was also aortic in origin, though it is not easy to say why it was not heard in the usual situation.

The Treatment of Aneurysm by Venesection.—In the *Lancet* of May 19th Dr. James T. R. Davison gives the details of three cases illustrating the benefit of bleeding in the treatment of aneurysm. In all three cases the symptoms were most urgent, and were promptly relieved by the abstraction of twenty-five to thirty ounces of blood from the arm. The first case was an aneurysm of the innominate artery and the ascending aorta with dilatation of the transverse arch.

The patient had frequent attacks of dyspnoea, evidently due to pressure upon the recurrent laryngeal. He had been under various forms of treatment, including that with iodide of sodium, with only slight relief. When Dr. Davison was called to see him he found him unconscious, with difficulty of breathing, his face cyanotic and his pulse of high tension. The patient recovered consciousness after the bleeding, and has remained in good health up to the present time, a period of nine months. During this time he has taken iodide of sodium three weeks of each month, and applied a cantharides blister continually over the aneurysm.

In the second case the aneurysm also involved the innominate artery and ascending aorta, with some dilatation of the transverse arch. The symptoms pointed to compression of the innominate veins, especially the right. The œsophagus was also affected. The effects of the bleeding were again very marked. Under the use of iodide of potassium the patient continues free from urgent symptoms, though the right external jugular vein is full and the superficial veins of the chest are dilated.

The third case appeared to be one of aneurysm of the ascending and transverse aorta. The symptoms were coldness of the right arm, præcordial pain, pain and difficulty in swallowing liquids, and hoarseness of voice. An attack of sneezing was followed by inability to swallow solids and an increase of pain. Venesection was performed, and immediately the difficulty of swallowing and the pain disappeared. A similar attack a year later was again relieved by the same measure, though not so promptly. The iodide of potassium was given in this case also.

In the treatment of aneurysm there are three indications to be kept in view: These are the contraction of the aneurysm, the hypertrophy of its walls, and lastly the deposition of fibrin within its cavity. The first indication can be met by a copious depletion, together with absolute rest for several months and the ingestion of but a limited amount of liquids. The second indication can be carried out by the internal administration of moderate doses of iodide of potassium. The third indication requires a diet which, without being so rich as to stimulate the circulation unduly, will nevertheless be nutritive enough to produce a sufficient quantity of fibrin.

The principle advocated is not the impoverishment of the blood, but the temporary diminution of its volume and of its pressure, so as to enable the aneurysm to contract, and place it thus under circumstances more favorable for the operation of other remedial agents which tend toward its consolidation. Repeated bleedings at short intervals are admitted to be positively harmful. But the above cases show that judicious bleeding is a valuable measure, by means of which alarming symptoms of compression may be quickly removed, instant death sometimes averted, and the patient placed under favorable conditions for the prolongation of his life.

Syphilis and Arteriosclerosis.—At a recent meeting of the Berlin Medical Society, Dr. A. Fraenkel (*Berl. klin. Wochenschr.*, March 19, 1894) presented some specimens illustrating the relationship between syphilis and early arteriosclerosis. The specimens were from a woman, thirty-six years of age, who had been under observation for over a year. When first seen, she had the signs of aortic regurgitation, and complained frequently of headaches which were sometimes accompanied by attacks of emesis. There was a history of articular rheumatism. The patient's husband was syphilitic. The woman herself had had growths upon the hand, which had opened spontaneously, leaving dentures which were still visible.

The patient improved under treatment and was discharged from the hospital. She afterward returned suffering from severe attacks of angina pectoris, during one of which she died.

At the autopsy the coronary arteries were examined with great care. The left coronary was normal in every way. The lumen of the right, however, was entirely occluded at its point of origin from the aorta. The change in the vessel was due to atheromatous, without doubt of syphilitic, origin, as was testified by the presence of a granular tumor, five centimètres and a half in diameter, situated in the ventricular septum. The atheromatous changes in the aorta extended upward on its whole extent down to the true aorta.

Fraenkel calls attention to the frequency with which

syphilis appears as a factor in the development of aneurysms, especially when the arterial change takes place in early middle life. According to Walsh, sixty per cent. of true aneurysms are due to syphilis; other writers place the percentage as high as eighty. Of nineteen cases observed by Fraenkel, nine (forty-seven per cent.) were syphilitic, and all of these nine cases were under fifty years of age.

The Relative Proportions of the Two Proteids in the Urine in Cases of Albuminuria.—Dr. Francis D. Boyd discusses this subject in the May number of the *Edinburgh Medical Journal*. Previous observations have generally been based upon faulty methods, hence the results have not been trustworthy. Dr. Boyd employed the ammonium-sulphate method, which has been proved to be entirely accurate. Unfortunately the method is tedious, which accounts for the fact that so few observations have been published on the subject since the method was described by Dr. Julius Pohl in 1886. As a result of the study of numerous cases of albuminuria during the last three years, Dr. Boyd draws the following conclusions:

1. In albuminuria both the proteids of the blood are present as a rule, but there are certain exceptional cases in which this does not hold.

2. We can not diagnosticate the form of kidney lesion from the proportion of the two proteids in the urine.

3. The proportions of serum albumin and globulin may vary widely in albuminous urine.

4. Even in amyloid degeneration, marked by great emaciation of the patient, the globulin may not be in excess.

5. In the albuminuria of pregnancy, both serum albumin and globulin are present, the tendency being for the globulin to be in a proportionately large amount.

6. In the albuminuria of heart disease, when there is no chronic kidney disease, the globulin is usually in larger proportion than is commonly found in chronic interstitial nephritis.

7. In acute nephritis, when there is no hæmaturia, the serum albumin and globulin are, as a rule, about equal in proportion; but when there is blood in the urine, the globulin is proportionately large in amount.

The Significance of the Venous Pulse is the title of an article by Dr. James Mackenzie in the June number of the same journal.

The tendency of the right ventricle to dilate and permit a regurgitant stream of blood to flow back into the auricle during the systole of the ventricle, when undue opposition is offered to the performance of its work, has long been recognized. The manifestation of this regurgitation is found in the veins, chiefly in those at the root of the neck. This outward sign of the dilated right ventricle may be associated with no other symptom of heart failure, or it may be a prominent feature along with other symptoms of extreme weakness of the heart. The appearance of the movements in the veins is not always the same. There may be heaving long waves, or a complete revolution, or there may be two or three. When these movements are accurately timed, the causes of the individual movements can easily be ascertained. Thus a wave preceding the carotid pulse can only be produced by the contraction of the sinus. In like manner, when a wave occurs at the time of systole, with the carotid pulse it can be inferred with certainty to be at the end of the right ventricle. At the same time, in blood regurgitating through the tricuspid valve during the ventricular systole and entering the venæ cavae, the pulse is inelastic and a complete blood flow (B.F.) activity, the waves not appearing, the veins fill the pulse is filled. When the tricuspid valve is incompetent, the blood comes during the ventricular systole from the sinus at two distinct junctures, through the pulmonary and tricuspid orifices, and

closure of the pulmonary valves there is a temporary increase in the wave sent back through the tricuspid orifice. The wave due to the ventricular systole is thus divided into two parts. The greater the tricuspid incompetence, the sooner will the auricle be filled, and the earlier will the first portion of the ventricular wave appear.

In cases of heart failure due to organic disease, manifested by great tricuspid incompetence, the auricle may be so distended that it apparently becomes paralyzed. Under such circumstances the auricle ceases to manifest its activity by any venous wave, and there is then produced but one wave synchronous with and due to the ventricular systole. Such a wave usually presents a notch indicative of the time of closing of the pulmonary valves.

The venous pulse may thus be divided into two forms—the auricular venous pulse and the ventricular venous pulse. The first is that form which presents distinct evidence of the functional activity of the right auricle. The ventricular venous pulse only appears when there is organic disease of the heart itself (usually valvular disease). When the failure of the heart is functional and not due to organic disease of the valves, the auricular pulse persists to the end of the wave.

Similar types of pulses may be recognized in the liver. Here the pulse only appears when there is organic disease of the heart.

Relapses in Typhoid Fever.—Dr. Hugh U. Stewart contributes an instructive paper on this subject to the *Practitioner* for March. The writer defines a relapse as a second attack of typhoid fever, with a repetition of all the phenomena of the first illness, occurring in a patient who has become or is just becoming convalescent from the primary attack. The clinical history of fifty consecutive cases collected from the records of Guy's Hospital showed that men were especially liable to relapses, thirty-one of the patients being males and only nineteen females. Age appeared to have no special influence, relapses simply occurring most often at that period of life at which typhoid fever is most common.

The interval of apyrexia between the primary attack and the relapse was, in the majority of cases, from five to eight days; but it may vary from one up to twenty-four days. In cases in which there were two relapses, the usual interval between the first and second relapse was at least double that between the first attack and the first relapse. The relapse is nearly always of shorter duration than the primary attack; and in cases with two relapses the second was never as long as the first.

Perhaps the most important clinical feature in these cases was the state of the bowels. Constipation was present in sixty-two per cent., the bowels were regular in twenty per cent., leaving only eighteen per cent. in which there was more or less diarrhoea. These figures seem to justify the view that constipation is an important reaction to the occurrence of relapses.

In order to study the pathology of relapses, Dr. Stewart collected forty fatal cases from various sources. These cases were without a doubt that there is an important difference in the seat of infection in primary attacks and in relapses. In thirty-five of these forty cases, or eighty-seven per cent., the large intestine was found almost dead, and the small intestine contained solid clots, whereas in thirty-five cases of primary attacks collected for comparison, but eight, or twenty-two per cent., had the large intestine quite healthy, but the small intestine showed recent ulcerations. The author therefore holds that a relapse is due to a re-infection of the large intestine by bacilli derived from some part of the small intestine above.

It is generally agreed that a fatal relapse to a relapse of typhoid fever is very rare. This is easily explained, according

to Dr. Stewart, when we remember, first, that the relapse, owing to the acquired partial immunity, is not so severe as the primary attack, and, secondly, that the large intestine, which is the chief seat of ulceration in relapse, is thicker than the small. Thus the very important danger of perforation is to a large extent removed in a relapse, and we find accordingly that the prognosis, far from being worse, is considerably better than that of a single attack.

Epidemic Jaundice.—In the *British Medical Journal* of May 26th Dr. William Rankin comments briefly upon two series of cases of jaundice of an epidemic nature. The first series, eleven in number, was seen during the months of July and August of last year. All the cases occurred within a very limited area in the low-lying part of his district. The symptoms were alike in all cases. During March and April of the present year a similar series of cases, twenty-three in number, came under his notice in the high-lying part of his district, all within a radius of half a mile. Only young people were affected, the oldest being thirteen years of age. In addition to the jaundice, the patients complained of headache, nausea, vomiting, anorexia and general malaise. The tongue was coated; the stools were generally pale and clay-colored and of stiff consistence. In some cases, however, there was diarrhoea. In no case was there any fever while the patient was under observation. The medicinal treatment consisted of two sharp calomel purges at an interval of three days, and a mixture of nitrohydrochloric acid and nuxvomica given for a week or ten days. A milk diet was enforced, but the patients were not confined to bed. Recovery was rapid and complete.

Dr. Rankin was at first inclined to consider the jaundice to be due to ordinary gastro-duodenal catarrh caused by "errors in diet" or "catching cold." As the epidemic developed, however, it seemed remarkable that so many cases should occur within so short a time, and that they should be limited to a comparatively small area. There was no recognized influenza in the neighborhood at the time, though it is possible that the affection itself was a form of influenza attacking only the gastro-intestinal tract. At all events, Dr. Rankin believes that he had to deal with a disease of a distinct specific nature, like influenza, and fortunately of a mild type. As regards the exact nature of the poison he is unable to form any definite opinion. The jaundice itself might have been either of the obstructive or non-obstructive form; in the former case being due to a gastro-duodenal catarrh of specific origin; in the latter, to a poison of a specific nature circulating in the blood.

Miscellany.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee will hold its sixth annual meeting in the Kimball House, Atlanta, Ga., on October 9th, 10th, and 11th, under the presidency of Dr. J. B. S. Holmes, of Atlanta. The programme includes the following papers: The Responsibility of a Class of Criminals from a Medico-legal Point of View, by Dr. J. C. Le Grand, of Anniston, Ala.; The Treatment of Stricture of the Urethra by Electrolysis, by Dr. P. L. Brouillette, of Huntsville, Ala.; The Obstructive Urinary Diseases, by Dr. W. L. Gahagan, of Chattanooga, Tenn.; Urethral Surgery Ten Years Ago and Today, by Dr. T. C. V. Barkley, of Chattanooga. Reflex Neurosis in the Male, by Dr. Andrew Boyd, of Scottsboro, Ala.; The Pathological Import of Albumin in the Urine, by Dr. E. B. Ward, of Selma, Ala.; How to do Ab-

dominal Section without Fuss, Feathers, and Foolishness, and with Immunity from Sepsis, by Dr. Joseph Price, of Philadelphia: Puerperal Septicæmia, with Cases Illustrating the Several Varieties, by Dr. J. R. Rathmell, of Chattanooga, Tenn.; Reform in the Treatment of the Neurotic and Insane Viewed from the Gynecological Standpoint, by Dr. Charles A. L. Reed, of Cincinnati; The Essentials of Obstetric Nursing, by Dr. R. R. Kime, of Atlanta, Ga.; The Pernicious (or Inveterate) Vomiting of Pregnancy—a Plea for the Mother, based on Cases in Actual Practice, by Dr. E. A. Cobleigh, of Chattanooga, Tenn.; The Induction of Labor to Prevent Blindness, by Dr. Frank Trester Smith, of Chattanooga, Tenn.; The Slaughter of the Innocents, by Dr. E. Van Goidsnoyen, of Atlanta, Ga.; The Prognosis and Treatment of Placenta Prævia, by Dr. Richard Douglas, of Nashville; Uterine Cancer, by Dr. George R. West, of Chattanooga, Tenn.; The Treatment of Uterine Fibroids, by Dr. W. Gill Wylie, of New York; A Report of some Rare Surgical Lesions connected with the Liver, by Dr. John A. Wyeth, of New York; The Treatment of Stone in the Kidney, by Dr. W. E. B. Davis, of Birmingham, Ala.; Tuberculosis of the Kidney and Bladder, by Dr. H. Berlin, of Chattanooga, Tenn.; the president's address: Some Causes leading to Invalidism in Women, by Dr. J. B. S. Holmes, of Atlanta, Ga.; Amputation of the Mammary for Carcinoma, and the Treatment of the Axilla, by Dr. B. W. Bizzell, of Atlanta, Ga.; Excision of Malignant Tumors of the Breast, by Dr. Willis F. Westmoreland, of Atlanta, Ga.; Some Remarks upon Brain Surgery, with Reports of Cases, by Dr. Paul F. Eve, of Nashville; The Surgical Treatment of Empyema, by Dr. J. A. Goggans, of Alexander City, Ala.; Some Points in Rectal Surgery, by Dr. J. M. Mathews, of Louisville, Ky.; Appendicitis—its Surgical Treatment, with Report of Cases, by Dr. R. J. Trippie, of Chattanooga; The Treatment of Injuries and Inflammation of the Joints, by Dr. William L. Nolen, of Chattanooga; Burns and the Treatment thereof, by Dr. T. Ellis Drewry, of Griffin, Ga.; Is there Danger of not getting Good Union after Tenotomy? by Dr. C. W. Barrier, of Columbus, Ga.; The Hygienic Treatment of Syphilis, by Dr. T. M. Baird, of Hot Springs, Ark.; Mixed Infection, by Dr. M. B. Hutchins, of Atlanta; Electro-therapeutics, by Dr. J. P. Stewart, of Chattanooga; Headaches, their Etiology and Treatment, by Dr. R. P. Johnson, of Chattanooga; Migraine—its Etiology and Treatment, by Dr. Hugh Hagan, of Atlanta; Tuberculosis of the Nasal Bones, by Dr. B. F. Travis, of Chattanooga; Adenoids and their Sequelæ, by Dr. Arthur G. Hobbs, of Atlanta; Parasitis and Parasites of the External Ears of the Eye, with Reports of Two Cases, by Dr. Douglas Roy of Atlanta; The Use of Hydrastis Canadensis in Diseases of Mucous Membranes, by Dr. P. R. Corpey, of Marietta, Ga.; The Combination of Carbolic Acid and Capsaicin as an Antiseptic and Local Anesthetic, by Dr. William Perrin Nicholson, of Atlanta; The Treatment of Pneumonia in Children, by Dr. Frank S. Parsons, of Philadelphia; The Treatment of Small-pox, by Dr. C. H. Holland, of Chattanooga; Some Practical Points in the Treatment of Typhoid Fever, by Dr. James R. Reed, of Atlanta; The Hygiene of the Hospital and Prison Camps of the Georgia Penitentiary, by Dr. W. O. Daniel, of Atlanta; An Outline of the History of Medicine and Surgery in Georgia, by Dr. L. B. Grimes, of Athens; Unusual Venereal Phosphorus in a Case of Phosphorus in the Fifth Century, with Pathology, by Dr. W. C. Thomas, of Chattanooga.

The Treatment of Acute Coryza.—The *Pennsylvania Medical Journal* for September 1894, has an article on the nasopharyngeal treatment of acute coryza, in which it is stated that the following method, employed on the first day, may often prove successful, and is particularly recommended for persons who are not constitutionally

commonly only the prelude of otitis or laryngo-tracheitis. Brandt's remedy, said to be very popular in Germany, is as follows: Pure carbolic acid, ammoniacum, each, nine parts; alcohol, three parts; distilled water, twenty parts. A little sponge wet with this solution is to be placed in a paper cone, through which the vapors are to be inhaled by the nose.

The following procedure, recommended by Unna, of Hamburg, sometimes gives rise to surprising results: At the outset of the coryza the nasal passages are to be sprayed with a small quantity of a mixture of one part of ichthylol and one hundred parts each of ether and alcohol. This application of the spray is to be made only once.

Schröter recommends practicing antiseptics of the nasal passages by moistening them several times in the course of a day with the following solution, previously warmed: Corrosive sublimate, two thirds of a grain; Sydenham's laudanum and cherry-laurel water, each, twenty drops; distilled water, four ounces and a half.

The following powder is recommended: Boric acid, seventy-five parts; salol, twenty-five parts; menthol, one part; cocaine hydrochloride, two parts and a half. These ingredients are to be reduced to a fine powder, and a good-sized pinch is to be snuffed about once an hour. This powder, which is at the same time antiseptic and analgesic, is said to cause the sneezing to cease immediately, to restore permeability of the nose, and often to put a stop to the coryza in the course of twenty-four hours.

Sometimes these abortive measure are aided at the very outset of the disease by an energetic sweat, preferably brought about by the use of a vapor bath.

The Journal of the American Medical Association announces the approaching removal of its quarters to Nos. 82 and 86 Fifth Avenue, Chicago, and states that it will henceforth be printed on its own presses. We congratulate our contemporary on these signs of prosperity.

Tea-inebriation.—The *American Therapist* for September publishes a criticism of the report of the board of managers of the Pennsylvania Hospital, by Dr. James Wood, in which he remarks that he may be permitted to criticise the liberality displayed in that institution in the supply of tea and coffee, considering the deleterious effects of their indiscriminate use among persons who are supposed to be sane.

The writer has already reported a hundred and twenty-five cases of tea-inebriation. In the study of these cases it was found that seventy-two per cent. of the subjects were persons generally known as nervous; twenty per cent. had frequent attacks of faintness; fifty per cent. were troubled with gastric or intestinal indigestion with all of the attending ailments; three per cent. had seriously contemplated suicide; forty-five per cent. were sufferers from persistent headache or cephalic neuralgia; ten per cent. had spells of great depression; twenty per cent. were despondent; fifty per cent. were excited; nineteen per cent. were troubled with perceptible palpitation of the heart; and twenty per cent. had insomnia, and when it was not insomnia, sleep, although they were able to get up, was greatly troubled by the most harassing nightmares and dreams. In twenty per cent. the patients were nervous, hyperæsthetic, and anxious, with a morbid, well-marked, morbidness, especially those of the most illing quality and intensity. Such a patient, as the author, presented to the thoughtful physician, is most deplorable in every respect. These poor individuals often consent to a liberal use of tea and coffee, without giving consideration to their action. Apparently.

The author is strongly in favor of tea as a medicinal agent in the treatment of this morbidness. In the present case, the tea was

tions for the insane in Ireland, he says, tea-tipping is given a most prominent place, and those in charge of these institutions do not hesitate to say that it is a direct cause of insanity.

The writer has traced many cases of insanity to the immoderate use of tea. Every intelligent physician knows that coffee interposes serious obstacles in the treatment of occult diseases associated with or dependent upon hepatic torpor. Yet, in this institution there are men consuming coffee at the rate of thirty pounds a year, each, and women consuming thirty-seven pounds of coffee and thirteen pounds of tea a year, each. This would be ten times as much as sane people ought to have. No wonder, says Dr. Wood, that the record of recoveries is so low as thirty-one and thirty-two per cent. among men and women respectively.

The Use of Pilocarpine in the Treatment of Acute Articular Rheumatism.—In the *Journal des sciences médicales de Lille*, for September 15th there is an article on this subject by M. Drappier, of Ardennes, in which he says that since the introduction of salicylated preparations in the therapeutics of this disease all other treatments have been completely abandoned. Sodium salicylate, which is the most frequently used, causes a rapid diminution of pain, fall of temperature, and disappearance of oedema of the articular tumefactions. Its abortive action has made it the preferred remedy, the specific in this disease. In certain cases, however, it gives rise to toxic symptoms, so that it is impossible to continue its use, and it is necessary to resort to other means to alleviate the patient's sufferings.

M. Drappier relates the following case in which pilocarpine was employed with good results: A man, forty-five years old, suffered with acute articular rheumatism for ten years. In the beginning, the salicylated medication was successfully used, but gradually the action of the medicine lessened, and from one hundred and twenty grains the doses were progressively increased to two hundred and twenty-five grains, and on one occasion the patient took two hundred and seventy grains, which produced only a very slight sweating and did not bring any appreciable alleviation. Very soon this immoderate use of sodium salicylate provoked such gastric intolerance that its further employment was impossible; it was used also in injections, but without success; antipyrine was tried, but no good results were obtained. Vapor baths or hot-air baths were then prescribed, but they had little effect, and finally hot poultices constituted all the treatment until March 2d, when the patient had a very acute and painful attack. The author then made an examination and found that the right arm and the left wrist were red and very much tumefied. The hand movement was impossible, on account of the pain it provoked. Before the author's visit the patient had tried the sodium salicylate, but it had brought on vomiting. M. Drappier decided to try pilocarpine, and he gave a subcutaneous injection of three tenths of a grain of nitrate of pilocarpine. The result was abundant sweating, and that night the patient slept for a short time. On the following day the pain returned, but was less intense; in the evening another injection was given, and the patient was able to sleep all night. On the fourth day the pain disappeared, but the treatment was continued two days longer, at the end of which time no manifestations of painful symptoms were observed. The patient had had no vomiting and was now entirely restored to his state of health.

The employment of pilocarpine in the treatment of acute articular rheumatism, says M. Drappier, is not new; they have been given in the form of salt or drinks. Gouty patients have been treated with pilocarpine and pilocarpine, but these attempts have not been renewed. Meanwhile, the poisonous ad-

servation proves that this remedy should not be ignored when the employment of a salicylate is impossible. Of course, says M. Drappier, no conclusion can be drawn from an isolated case, and it can not be said that pilocarpine is an infallible remedy in rheumatism, but the facts just cited prove that, in certain cases, its employment may be of real use.

Prizes Offered by the Belgian Academy of Medicine.

The *Lyon médical* for September 9th announces the prizes for the year 1895 as follows: The first prize, of eight hundred francs, will be given to the author of the best work on the following subject: Explain the indications, the technique, and the immediate, remote, and definitive results of operations on the biliary canal—the work to be based as much as possible on personal observations.

The second prize, of seven hundred francs, will be given to the author of a work in hygiene on the following question: Determine, as much as possible by experimental researches, what are those diseases (besides the following: glanders, tuberculosis, trichinosis, measles, rabies, and anthrax) the changes due to which should make us reject for public consumption the flesh of animals attacked by them.

The date named for the close of the competition in these two subjects is April 15, 1895.

A Case of Kerosene-oil Poisoning.—Sheik Karim Buksh, of Mackeypore Tea Estate, Assam, in the *Indian Medical Record* for August 16th, relates the case of a boy, two years old, who inadvertently swallowed an ounce of kerosene oil, and two hours later showed well-marked symptoms of kerosene poisoning. His temperature was subnormal, 96.8° F., the skin was cold and clammy, the face was deadly pale, the breathing was stertorous, the eyes were suffused, and the pupils were somewhat dilated; the pulse was small, thready, and rapid, and the abdomen was tense and tympanitic. He was slightly unconscious, but gave evidence of feeling pain when the abdomen was pressed. Thirty grains of ipecac were given as an emetic, and in fifteen minutes some food mixed with the oil was ejected. Sulphuric ether was then given. A few hours later a dose of castor oil was prescribed, which acted freely in three hours. Gradually the temperature rose to 101°, but subsided on the following morning, when, after a good sleep, consciousness returned, and all the unpleasant symptoms had disappeared.

The New York Academy of Medicine.—At the next meeting of the Section in General Surgery, on Monday evening, the 8th inst., patients will be presented, and Dr. C. N. Dowd will read a Report of Two Cases of Multiple Subcutaneous Tumors.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 9th inst., patients and pathological specimens will be presented, and Dr. S. E. Brewer will read a paper (title to be announced).

The Distribution of the Sexes.—The *Union médicale* for September 14th says that the number of women in the world is nearly equal to that of men. In France the numbers approach more nearly to equality than in any other country, there being 1,007 women for 1,000 men. For the same number of men in Sweden there are 1,064 women, and in Greece only 933 women. In the French colony of *Reunion* there are 547 creole women for 1,000 provincial Frenchmen, colored men included. In Hong Kong there are 1,000 men for 336 women.

An Ointment for Urticaria.—The *Practitioner* recommends an ointment consisting of thirty parts of vaseline, from three to six parts of zinc oxide, and from three to six tenths of a part of menthol or phenol, to be applied to the wheals.

Original Communications.

A CASE OF

LARYNGECTOMY BY A NOVEL METHOD.*

By H. L. SWAIN, M.D.

NEW HAVEN, CONN.

THE only excuse which I have to offer in appearing before this association with the report of a single case of laryngectomy is the desire to submit to your judgment the method adopted, that, by the light of your scrutiny, it may be decided whether a repetition of the procedure would be warranted in future cases. At the same time, as removal of the larynx is not a frequent operation, a discussion of the method will not, I trust, be wearisome to you.

An operation for the removal of a carcinoma from any organ or portion of the body is looked upon with favor, accordingly as it more or less perfectly accomplishes the complete removal of said growth. And, in the second place, any given mode of operating takes precedence of the others as it is able to accomplish the first results with the least danger to the life of the patient, the least impairment of function and usefulness of the part, the least discomfort to the patient, and the least outward deformity, in the order named.

I take it that the experience of the gentlemen present agrees with my own in the particular that in only very rare and exceptionally favorable cases can we by any other than the complete laryngectomy successfully remove the malignant growths of the larynx. What Dr. Delavan said last year in his paper concerning the withholding of statistics as regards the removal of malignant growths from the larynx I believe to be very true. If every case were reported, a different-looking table of mortality would appear, and hitherto the record has been bad enough and far from encouraging. But I think the attempts at removal by the less radical measures have been less generally reported when unsuccessful. The major operation is reported, the minor (such as thyrotoomy and half removal of the larynx) are forgotten and unreported, because so very frequently followed by recurrence. Hence statistics show wrongly for both. Certainly, my own experience in such minor operations, though limited, has not been encouraging. The last three months, which was done only last year, when every chance of success seemed to be on the side of the operation, was followed by recurrence and death of the patient within fourteen months. But granted that my own experience may have been limited and not, as theoretically, the complete removal of the larynx offers the surest way to secure a removal of an intractable carcinoma beyond the possibility of a recurrence. This being acknowledged, one must consider the objections to the operation. Granting it to be a genuine operation, for as has been shown with some definiteness, many of the cases die from the immediate effects of the operation itself. The mortality has been shown to be due

to the following events: The shock of the operation as such; the effect of the removal of the larynx upon the heart and general circulation; the loss of blood; the penetration of this latter into the lungs at the time of the operation; secondary hæmorrhage; inspiration of the discharge from the wound, making a septic pneumonia; the infection of the general wound by the penetration of the secretions of the mouth pure and simple, and, when containing portions of food, increasing the danger of septic pneumonia; the difficulty in feeding the patient after the operation even by a tube, and the large wound, which must heal up by granulation, free to infection. The operation being recovered from, there remains a hole from the patient's pharynx into the neck, which keeps the danger of inspiration pneumonia still hanging over the patient like the sword of Damocles, and the usual tracheal opening, while between lies the large median wound to slowly heal. The patient can not talk, can not eat, can not even enjoy the luxury of a swallow of cold water, unless he effects a closure of the wound in the pharynx. He is still fed, but through an esophageal tube, for a long time, and finally, when that is dispensed with, can only swallow as he stops up the opening from the throat. When later the condition of the wound permits, if his surgeon is gifted with the proper ingenuity, an artificial larynx is inserted, and, with a caricature of a voice, he is released from the hospital—alive, to be sure, but is he very happy? Notwithstanding all these dangers and discomforts, the operation, even by the older methods, is deemed and is justifiable.

Now, any method of operating which would lessen any one or all of these dangers would especially recommend itself as of value according to the premises at the beginning of this article. The chiefest danger to life outside of unskillful technique and accidents occurring in performing the operation is unquestionably that of septic infection or septic pneumonia.

Bardeleben found that sewing the trachea to the skin and shutting off the communication with the mouth changed his mortality from the operation from four deaths in five to four straight successes. He later opened the wound in the neck to make room for the artificial larynx.

Poppert, of Giessen, following the same idea, operated in a case, sewing up the pharynx wound permanently and stitching the trachea forward into the median incision in the neck. The patient was immediately able to swallow fluids, and food, and speak in whisper tones. The vocal power increased in power.

Hans Schmidt, in his paper in 1888, reported a case where inadvertently the same result was obtained and the patient was able to speak in a hoarse, guttural tone, but without sufficient good result with under ordinary circumstances.

In addition to these examples of operating without pharyngeal opening, you will find some instances in which Quaker Cure patients who were operated by Professor J. S. Smith at the last meeting of our association. Here

* Read before the Association for the Advancement of Laryngology, at New Haven, Conn., September 13, 1894.

* These cases were presented by me at the meeting of the New England Laryngological Association, at New Haven, Conn., September 13, 1894.

was a man who, without his larynx, spoke easily and audibly by what was termed a buccal voice. No communication existed from the pharynx with either the trachea or exterior of the neck, save a very small fistula opening externally. The patient was able to swallow liquids and solids easily and comfortably, and, moreover, was able to get along without any tube in the tracheal opening. His larynx had been entirely removed by a series of operations, the lips of the wound sewed together, and the wound into the pharyngeal cavity altogether closed. This made an anterior wall to the œsophagus, and, being elastic and distensible, the patient had succeeded in learning to dilate it sufficiently to afford a reserve of air—a sac—which enabled him to say a word or two without refilling. It was this air which the patient propelled against some tense, vibratory surface, tension being produced by the constrictors of the pharynx, and produced sounds which, modified by the mouth, tongue, and lips, became speech*—a wonderful exhibition of how Nature may be depended upon to help fill the gaps in space and function when intelligently assisted. Save for the fact that the patient was unable to make any connection between his lungs and his mouth, and did not get his air properly moistened, sifted, and warmed, he was every whit as comfortable as the generality of people, and his functional capacity in the world but little damaged.

The salient points were, then, that he could talk as well and better than most patients with an artificial larynx, he could swallow immensely better, he had no mechanical contrivance which might at any time get out of gear, which needs attention and constant cleansing, and he had no other wound or disfigurement of the neck than the tracheal wound, which latter he could cover up very nicely. A further advantage was that there was no irritation of the wound from the tubes—tracheal and artificial larynx—and he was in no way worse off than those who have to breathe through a tracheotomy tube.

It will be thus seen that these cases—the results some of chance, others of a definite purpose—were better than the older methods in these following particulars:

1. The danger to life from inspiration pneumonia was very much less, owing to the shutting off of the mouth.

2. The patient could swallow with the greatest of ease a food of choice.

3. The most wonderful of all, in at least three of the cases a voice useful if not beautiful, and fully as satisfactory as with any artificial larynx, was obtained, and that without the bother or trouble which the latter always is, while, furthermore, the possibility of starting a recurrence by the restoration of a manducant passage into the body—the artificial larynx and trachea—could be entirely avoided.

4. The patients were very comfortable and did nearly all the work with the artificial apparatus.

Therefore all the conditions demanded at the beginning of the article were fulfilled.

A case of epithelioma of the larynx having presented

itself, after much serious discussion of the matter with Dr. W. H. Carmalt, the attending surgeon at the State Hospital, it was determined to remove the larynx according to the methods to be related. On the day previous to that set for the operation Dr. Carmalt and the writer rehearsed the operation on the cadaver and found it possible to outline every step as it later was accurately carried out on the patient.

The previous history of the patient is as follows:

Mr. S., a German, joiner by trade, consulted me at the dispensary on the 18th of October, 1892, for a hoarseness which had existed without pain or coughing since last summer. Patient was not aphonic, but simply very hoarse. Never previously hoarse for long at a time. Family history good.

Status Præsens.—A healthy-appearing man of middle height, forty-two years old, well nourished, with no outward deformity of neck or chest. Lungs, chest, and abdominal organs were healthy. Mouth in order. Pharynx bluish-red, as so often seen in smokers and beer-drinkers. Larynx slightly congested in appearance, but presenting on the right vocal cord a tumor. The latter was as large as a good-sized pea, projected from the free edge of the cord in about the middle, and possessed of a broad base and firm consistence. Color was light red, evidently due to its abundant vascularity. No swelling or infiltration of the rest of the true or false vocal cord. No immobility of the cord other than pure inertia.

Diagnosis was made of a fibroma of the vocal cord and attempts were immediately begun toward its removal. Owing to the broad attachment and firm consistence of the tumor, forceps proved useless and so did the snare. The attempt was about to be made to slit it off with the knife when patient disappeared and returned in December last after more than a year's absence with a vastly different condition of things present. Instead of a tumor, there was an ulcer and a defect of the vocal cord where it had been. The false vocal cord had begun to swell. There was no excrescence of any kind visible. Later a very distressing cough developed, and as the swelling and ulceration began to increase, a question as to tuberculosis arose. This was finally settled negatively and the cough got better about February 1st. Just previous to this time some subchordal swelling developed, and later the whole lateral surface of the larynx seemed to be elevated and narrowed the lumen. The false vocal cord was smooth and swollen sufficiently to completely cover in the true, and, although the diagnosis was made of epithelioma, nothing presented itself until the 1st of March which could be removed to examine microscopically. The glands in the neighborhood were enlarged. There were no subjective pains; some soreness on swallowing.

At this time the stenosis of the larynx had become so alarming that the patient was admitted to the hospital for tracheotomy. This was done March 5th under cocaine. Patient recovered from the operation quickly, and the swelling in the glands disappeared in a few days. About this time a small excrescence appeared, jutting out from the ventricle. Attempts were frequently made to get a piece out large enough to make an accurate preparation for the microscope in order to settle the little remaining doubt of the existence of a true carcinoma. This was finally done just previous to the operation.

The condition of the larynx was then as follows: Right half of larynx completely filled out by swelling, which, at least in the case of the false vocal cord, completely blocked the larynx, leaving just space enough to see the left cord on its posterior third. The part, the epiglottis, and both arytenoids were entirely free from disease. No glimpse of the interior of

* In the *British Medical Journal*, Vol. 11, 1891, Dr. J. H. Greenhalgh, of London, has described a case of a patient who, after the removal of the larynx, was able to speak and swallow without any artificial aid. He also mentions a case of a patient who, after the removal of the larynx, was able to speak and swallow without any artificial aid.

the larynx was to be had, but, as its exterior was perfect, the conclusion was fair that the whole of the tumor could be removed.

The operation was performed on March 18th by Dr. Casmalt, assisted by Dr. W. W. Hawkes and the writer and in the presence of Dr. J. Solis-Cohen, of Philadelphia, whose advice on the occasion was very helpful. The integuments having been cleansed, the anesthesia was begun at 10.30 A. M. The first step was to carry the incision from the lower border of the tracheotomy wound down to the sternum. The trachea was bared and the incision carried down through the third and fourth tracheal rings. The old cannula was withdrawn and a sponge Trendelenburg cannula introduced. This had been so arranged that the sponge was very dry and absolutely flattened around the tube. A little water was conducted to it through the usual tube for inflating the regulation rubber bag. The sponge immediately swelled enormously and perfectly closed the trachea so that only once during the operation did it leak air, and on its final removal had only let through a very little blood. This was due to the sponge not being absolutely round. It also caused no irritation. Threads were secured to the cut ends of the first tracheal rings, but only one held, the cartilage being too brittle. The incision in the skin was then extended upward to the hyoid bone in the median line and a cross cut made to the sterno-cleido-mastoid of either side. The larynx was then carefully laid bare. Each bleeding point was checked as we went along. When finally all was cleared away, a director was carefully passed back of the trachea between it and the œsophagus and acted as a guide to the bistoury which severed the larynx from its neighbor, the trachea. A strong hook now was stuck into the larynx, and very carefully the latter was dissected away from the anterior wall of the œsophagus from below upward. When the arytenoid cartilages were reached the direction of the incision was changed and directed toward the base of the epiglottis, including in its path the mucous membrane covering the arytenoids and portions of the ary-epiglottic folds. The long cornu of the thyroid cartilage was cut across. The epiglottis was finally cut across just through the tuberculum and the larynx soon freed from all attachments. Careful examination showed only one slightly suspicious spot on the mucous membranes in this locality, which had been retained, and that was carefully removed. The epiglottis was then stitched to the posterior border of the opening which had previously been the rima glottidis and closed the ring completely, thus bringing the epiglottis in contact with the arytenoid mucous membrane, converting the ring into a linear wound running from side to side. A perfect anterior wall was thus made for the œsophagus.

Examination of the upper border of the trachea showed that on the right side there was a decided evidence of pythemia, and so a section of two inches on that side had to be carried away. The other one was fractured to meet it.

Everything being ready and all hemorrhage having been stilled, the wound was sewed up with continuous catgut suture, beginning with the lower corner so that it lay on the top of the acetabulum. When the fracture was reduced a few support sutures were introduced in front to prevent the fracture slipping down ward, and the operation was successful. The wound healed, the complete healing of the fracture into the acetabulum, looking a round swelling which turned inward and backward. Wound was sewed up with several fine ligatures. No further treatment was needed. Operation was finished at 12:30 p. m.

During the entire time the patient had been persistently anorectic (had not) even partaken of weakness. The patient stated the illness had been taken out. Whether the exposure was little known here or some way by the transmission of contacts or otherwise, the transient fever was stopped, still not in

pear. He did not breathe for a few seconds, but later concluded to go on and there was no further trouble.

He recovered well from his ether, and, save for a little nausea, was very comfortable. He was made to lie flat on his back and the foot of his bed was kept raised, so that the head was lower than the feet for twenty-four hours. When thirsty he was allowed to sip a little sterilized water, which he swallowed easily and without much pain. He was fed through a tube in the esophagus.

During the first few days the mucus stuck most tenaciously to the opening of the trachea, and when later the wound swelled up, especially at the sternal border, the tracheal opening was considerably below the level of the neck, and thus the removal of mucus was very difficult. The swelling caused a stitch or two to tear out on the third day, and ice was kept constantly upon it. Gargle wet with 1 per cent solution covering the opening of the

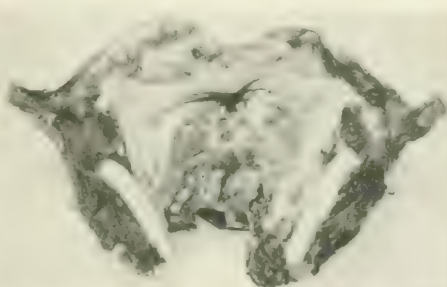
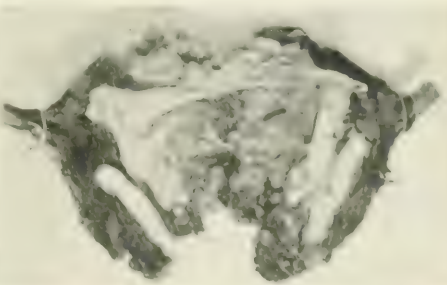


FIG. 1. Photographs of the insecticide (1) and the insecticide (2) applied to the tree edge. The insecticide (1) is applied to the tree edge, and the insecticide (2) is applied to the tree edge. The insecticide (1) is applied to the tree edge, and the insecticide (2) is applied to the tree edge.

same being used to cleanse the wound. The temperature did not get above 100° at any time, and on the third day began to go down. On the 22d a pus cavity was found above the opening to the trachea, where one of the stitches had pulled out from the upper posterior border of the trachea. The cavity held a half-teaspoonful of pus and lay behind the integument flap in front of the esophagus. This healed up in a few days. The



ing irritation (probably with the radio-150 beam). The second day (20th) it looked somewhat better, apparently by the time the patient was given food. No further lung tissue in the clearing could be seen, and so on the 26th the patient was allowed to swallow all his constituents (20 g) of water being all that. On 27th (4th day) the macrophages had been passed twice.

By April 1st the "American Scientific Series" can be had, priced

condition that he was put upon regular hospital diet. About this time it was noticed that the tracheal opening, instead of remaining round, was becoming slitlike, and it was decided to put a tube in to make it regain the right shape. Since that time the patient has had no especial trouble and has been of no inconvenience to his medical attendants, except in getting the right kind of a permanent tube. Some of these latter, for he has had several, gave him a peculiar pain when out of position or when he coughed. The pain would streak down to the neighborhood of the heart and then run down his arm, exactly like the pains of angina pectoris. I could produce them by pressing the tube downward against the sternum. Of course, patient was very quiet at first and did not disturb his nurses by talking too much, but later in his constant efforts at talking the merest trace of a whisper could be heard. This was in pronouncing *s, z*, and *ch* in German. Later the whisper became more evident on these same letters, and by watching lips the whispered consonants made his speech quite intelligible. Even now words are not clearly spoken, but at the present writing I am able to understand short sentences or single words very satisfactorily with my back turned and he several feet away. His German is better understood than his English, although he speaks the latter perfectly well. He can whistle, as he says, "ganz gut," and he craves to smoke, a thing which he can accomplish. By developing the power to whistle he will add to his ability to speak. Certainly he is making constant progress in this direction. In every other respect he is perfectly well and nothing seems wrong with the wound inside or out. Inside, the epiglottis joins on to the remnant of the arytenoids, which show as two small hillocks at the base of the former. There is no marked depression between.

I can see nothing in this case to discourage me in operating in the next in the same way, and the only thing which suggests itself by way of criticism of the procedure is that the next time I should advocate wearing the tracheal tube from the start. Expectoration would be easier, and then the wound would assume the right shape from the start. I think it is an advantage to have the trachea accustomed to breathing air directly into it before the main operation, as both it and the patient are used to the conditions beforehand and are less irritated during the critical period of healing.

For the accompanying photographs I am indebted to Professor M. C. White, who has skillfully reproduced for you the appearance of the larynx after splitting open subsequent to the removal.

A CASE OF PSORIASIS

AT THE AGE OF TWO YEARS AND FIVE MONTHS

By C. M. RAMBO, M.D.,

CHICAGO, ILL.

MARY C. A., daughter of Henry and Catherine (McIntosh) Rambo, born August 19, 1891, has at present (July 1, 1893) the following condition:

From April, 1891, to August, 1891, I have treated until about two months before coming to Chicago with the child, in that time three and a half years of the ordinary psoriasis of the scalp, face, and trunk, but that the disease had been present since birth.

The disease appeared first on the scalp and spread to the face, trunk, and limbs, and then to the rest of the body.

The disease was first noticed by the mother, who noticed it

diathesis, and after most careful investigation could obtain no evidence of hereditary syphilis. Teeth in every particular perfectly normal.

Upon examination of the cutaneous affection I found it existing in the following locations: Extensor surfaces of the lower extremities, more marked about the knees; extensor surfaces of the upper extremities, especially upon the elbows and forearms; over the scapular region, and two small patches behind the right ear.

The disease manifested itself upon the scalp more in the form of a diffuse scaldiness.

The lesions consisted of dry, reddened, inflammatory patches covered with white imbricated scales, which, upon being detached, there were some minute points of exudation of blood.



There was some itching at the beginning of the disease, but at the time I saw him he complained of only slight itching at night, especially in the patches which had appeared recently. I made a diagnosis of psoriasis and regarded it as a very unusual case, since the disease appeared at such an early age, he being at the time I saw him two years and five months old.

About six weeks after I first saw him I succeeded in securing a photograph, which gives a fair idea of the extent and location of the disease.

It is proper to note that I treated the cousin of this child for the same disease. The patient was seven years of age when the disease first appeared.

I have also been informed that the grandmother of these

children had patches of skin disease of a similar character about the knees and elbows, which existed for many years before her death.

I report this case, since it is a rare occurrence to find so well marked a case at such an early age, and because I have been unable to find more than a few cases reported under the age of three years in all the literature that I have examined.

PAPILLARY HYPERTROPHY OF THE NASAL MUCOUS MEMBRANE COMPARED WITH A TRUE PAPILLOMA.

By JONATHAN WRIGHT, M.D.,
BROOKLYN.

THREE years ago, in a paper on Nasal Papillomata read before this association, I tried to show the error in nomenclature and the consequent confusion in nasal pathology introduced by some of our German *confrères*.

This has gone to such an extent in Germany that when they speak of nasal papillomata they have to stop to explain that they don't mean true papillomata, but Hopmann's papillomata.

Three years ago I presented the drawing of a section of a papillary hypertrophy, removed by Dr. Knight from the region of the middle turbinated bone, as an illustration of Hopmann's papilloma. Since then I have been in hopes of meeting with a true nasal papilloma, either in my own practice or in that of some of my friends. This hope has not been realized.

It has happened this spring that I removed from the middle of the inferior turbinated a mulberry growth which exactly corresponds to Hopmann's description as quoted in my paper referred to above. About the same time Dr. Newcomb gave me for examination a typical papilloma from near the edge of the soft palate, where they are so common.

Having examined these growths simultaneously, it occurred to me that it might be of interest to present draw-

ings to this society which would illustrate the total radical differences in the character of the two growths, disclaiming, however, any pretense of making any statements which are



FIG. 1, A. Drawing of a nasal papilloma, showing the soft palate.



FIG. 1, B. Drawing of a nasal papilloma, showing the soft palate.

not generally accepted by histologists. That these differences have not been generally appreciated by rhinologists is my excuse for taking your time.

Fig. 1, A, represents the external appearance of a pedunculated growth which we would all recognize clinically as a papilloma. Virchow says it really should be called a fibroma papillare, and it is so labeled in some works on pathology. You will observe that it consists, roughly speaking, of a thick stem, at the end of which we have a number of irregular sprouts: some, simply conical in shape, spring directly from the central stem, but the larger



FIG. 1, C. Drawing of a nasal papilloma, showing the soft palate.

number are again branched into stems and sprouts. At a glance it looks like a budding, tuberosa vegetable.

Fig. 1, B, is a drawing of the nasal growth, showing a symmetrically rounded mass, rounded by some low, numerous or long papillary growths. This we are familiar with under the name of a secondary hypertrophy, which is frequently seen at the posterior ends of the inferior turbi-

* Read before the American Laryngological Association at its annual meeting, Cincinnati.

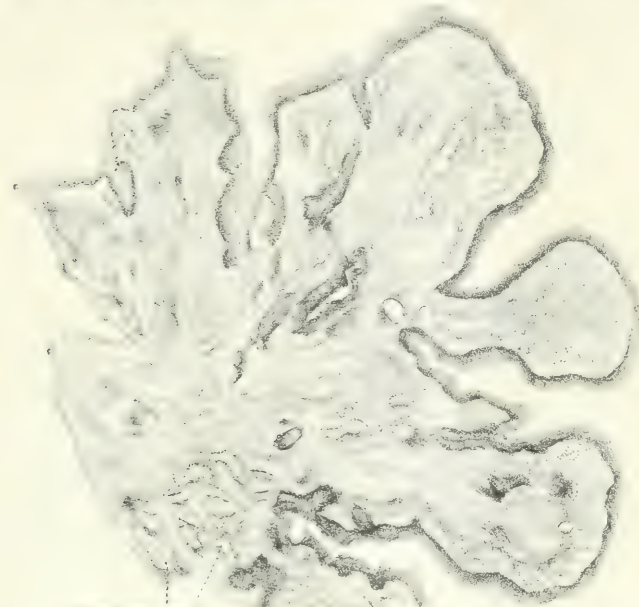


FIG. 2, A.—Papilloma.

FIG. 2, B.—Nasal hypertrophy.

nated bones, but which in this case was found more anteriorly as a sessile but perfectly circumscribed movable growth. Its removal by the cold snare, although occupy-

ever, this framework is covered by a large number of regularly striated layers of flat epithelial cells. With a still higher power they would be seen to be "stickle cells."

similar to those of the epidermis and of the mucous surface of the palate from which the tumor sprang.

This epithelial proliferation is very marked and very characteristic. In other forms of papilloma—the mucous wart, or pachydermia laryngis—digitations of the proliferated epithelium dip down into the stroma. The surface itself may be smooth and only the digitations exist in the stroma, as in some of the smooth warts on the septum near the columna.

All these are closely related epithelial growths. None of them bear any relation or even close resemblance to the "mulberry hypertrophy."

Fig. 3, B, together with Fig. 2, B, explains the more complex structure of the nasal growth. It consists of all the constituent parts of the mucous membrane of the inferior turbinate body. You notice a few glands. The extension of the venous sinuses filled with blood is especially noticeable. There is a considerable increase in the amount of fibrous connective tissue. This, at the periph-

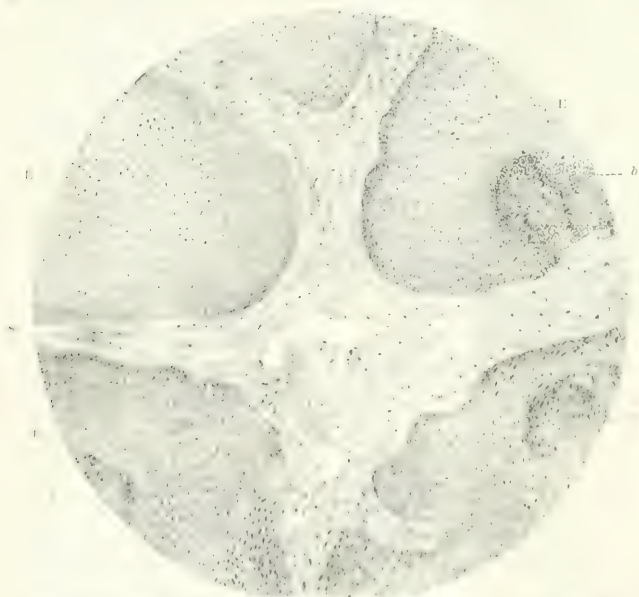


FIG. 2, B.—Nasal hypertrophy.

the circulation was in a higher degree and more immediately imperiled by the action of chloroform was held for a long time and with great obstinacy by the London and Edinburgh schools respectively, and finally led, under the influence of Surgeon-Major E. Lawrie, an enthusiastic pupil of Syme's, to the most extensive, thorough, and decisive investigations of the two celebrated Hyderabad commissions.

The labors of the second commission were partly directed and carefully watched by Dr. Lauder Brunton, delegate of the *Lancet*, who, in his excellent work, *Pharmacology and Therapeutics*, had very decidedly stated that one of the dangers resulting from chloroform was death by stoppage of the heart, but who afterward did not refuse to sign the report of the commission, some of the conclusions of which ran as follows: "1. Chloroform, when given continuously by any means which insures its *free dilution with air*, causes a gradual fall in the mean blood pressure, provided the animal's respiration is not impeded in any way, and it continues to breathe quietly without struggling or involuntary holding of the breath, as almost always happens when the chloroform is *insufficiently diluted*. As this fall continues, the animal first becomes insensible, then the respiration gradually ceases, and lastly the heart stops beating."

"35. The commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

A very similar opinion is held by the majority of the surgeons in France, and expressed by Claude Bernard in his *Leçons sur les anesthésiques et sur l'asphyxie*, as follows: "Aussi un certain nombre de chirurgiens proposèrent-ils d'abandonner le chloroforme pour revenir à l'éther, dont l'usage paraissait moins à craindre. Aujourd'hui encore, les chloroformiens de Lyon emploient principalement l'éther. On croyait le chloroforme plus dangereux que l'éther parce qu'il était plus actif; mais en réalité, la fréquence relative des accidents par le chloroforme tenait peut-être tout simplement à ce que c'était cet agent anesthésique qu'on employait dans l'immense majorité des cas. Plusieurs discussions ont été provoquées par les partisans de l'éther, et furent par les représentants de l'école de Lyon, et il a été constaté que l'éther, lui aussi, avait produit un certain nombre d'accidents mortels. Les deux agents anesthésiques unis peuvent donc, l'un comme l'autre, entraîner quelque rupture de cœur, et le chirurgien humain a conservé presque partout le chloroforme, dont l'action est plus rapide et plus complète."

In Germany, too, the use of chloroform for surgical anesthesia is much more frequent than that of ether, and for this reason the carefully gathered statistical statements which E. Graef published in the *Archiv für klinische Chirurgie*, vol. xlii, 1891, and vol. xli, 1893 (Zürich), notwithstanding, are not so numerous as to decide the question which of the two anesthetics is generally preferable or more suited to some particular cases.

The question is, however, entirely different as regards the cause of death, when either mode of administration, that of chloroform and oxygen combinations or the ether, and particularly combinations of ether with

shown that the immediate dangers arising by paralysis of the heart or the respiration during the time of the administration of the anesthetics are by no means the only ones that have to be taken into account. Irritation of the bronchial tissues, and above all serious changes in the excretory glands, are the most prominent of the bad after-effects of a prolonged narcosis, and may lead to bronchopneumonia or to what formerly in many cases was considered to be a "septic condition." Professor William H. Porter, in his paper, *The Urine, its Density in Relation to Anæsthetics* (*The Post-graduate*, July, 1893), shows that ether narcosis produces a much higher degree of suboxidation than chloroform, the products of which put a strain on the excretory functions of the kidneys, to which these organs, if not in a perfectly healthy condition, may in the course of one or several days finally succumb. "This delay in the fatal result takes the odium off the ether as compared with chloroform, while the ether still remains equally responsible, and probably causes as many if not more deaths than chloroform." In the discussion of Dr. Porter's paper several experienced surgeons expressed their unanimous consent to this view of the relative perilousness of the two anesthetics—a fact which seems to indicate that even in America chloroform is going to be released from injudicious condemnation as it was expressed in H. C. Wood's *Therapeutics* by the words: "These advantages (of chloroform) are, however, so outbalanced by the dangers which attend its use that its employment under ordinary circumstances is unjustifiable."

The question henceforward will apparently be, not whether chloroform or ether ought to be used exclusively as the less dangerous anæsthetic under all circumstances, but in what cases it is safer to use chloroform, and in what ones ether would be preferable.

The experiments of the Hyderabad Commission have shown that, to produce an efficient anesthesia with ether, it is necessary to exclude the air as thoroughly as possible, and that under this condition ether narcosis is very similar to an asphyxia brought about by the inhalation of carbonic-acid gas; whereas chloroform narcosis, to be quiet and safe, requires a free and even dilution of the anæsthetic vapor with air. This principal condition for a safe administration of chloroform is not fulfilled by the simple method of pouring the anæsthetic on a cloth folded to form a funnel, or on a mask with flannel lining. For even the so-called drop method does not prevent very considerable fluctuations in the concentration of the inhaled vapors. To obviate this fault Dr. Junker constructed his well-known and much-used apparatus, in which by means of a double hand balloon a continuous stream of air is driven through a column of chloroform (or methylene) contained in a narrow bottle, and after its saturation with the narcotic vapors is caused to be inhaled by the patient by means of a mask which is well fitted to the face, covering both nose and mouth.

There are, however, two objections to this device: First, that the saturation of the inhaled air with chloroform vapor is in the main too strong; and, second, that a regulation of the intensity of the narcotic action can only be obtained by

increasing or decreasing the volume of pumped air—that is to say, by a more or less frequent compression of the balloon, and not, as would be more desirable, by a change in the saturation of an equal quantity of air. The different modifications of Junker's apparatus, which the well-known London instrument makers, Krichke & Sessmann, brought before the profession, tended to eliminate these faults, but they only succeeded in circumventing them temporarily, for the air conduction through the chloroform was not improved, while the regulation was assigned to a stopcock in the afferent tube, which, of course, can only modify the volume of the introduced air and not the saturation of the air escaping from the chloroform bottle. The same holds true with the advised fractional compression of the bellows, while the somewhat artificial calculation as to what chances of further dilution the narcotic vapor may find in the mask can not make up for these shortcomings. The watching of the patient's respiration being, according to the decision of the Hyderabad Commission, of paramount importance, it was a good idea to furnish a chloroform inhaler with a contrivance which continually drew the attention of the administering physician to this process and facilitated its control. An old, experienced, and reliable anesthetizer, who does not allow his attention to wander from his proper task, can easily and safely do without such a respiration indicator. But in most of our hospitals, as yet, the junior or senior clinical assistants—i. e., young and inexperienced men—are intrusted with the narcosis, and their attention is naturally too often distracted by the interest they take in the procedures of the operation. In their behalf, a respiration indicator is of great value, but it ought to appeal rather to the ever-disengaged ears of the administering physician, as well as of the operator, than to the eyes, for those of the latter are necessarily and those of the former may occasionally be occupied with the surgical manipulations.

The writer is not the first to find fault with the Krichke & Sessmann apparatus, and very essential improvements on it have been devised before.

In the apparatus which Dr. Kappeler, of Münsterlingen, described in the *Fachschriften der deutschen Gesellschaft für Chloroform* (XIX. Congress, 1891), the afferent tube, after passing the stopper of the chloroform bottle, is cut short, so that the stream of air does not pass through any quantity of chloroform, rising up in bubbles, to escape through the efferent tube, but only strikes the surface of the chloroform, without saturating it to any extent. This has a double advantage. First, the air is free from the beginning much less, but more evenly saturated with chloroform vapors, and the concentration continually decreases, as the surface of the chloroform is falling, and the ascending stream rises at increasing height, evaporating more of the chloroform, and being, as stated by Siegfried, less turbid, only yields its most volatile parts to the stream of air, whereas the heavier and less volatile concentrations are left at the bottom of the bottle, and thus (if of good quality) as long as the liquid chloroform, which is perfectly purified by crystallization at a very low temperature, and then pass-

sure, is not generally applied. But there is one drawback even to this ingenious apparatus of Kappeler's—viz., the difficulty of adapting the concentration of the narcotic vapor to the momentarily varying requirements of the narcosis. A constant decrease from the first respiration will not answer this purpose; on the contrary, it is in most cases advisable to begin with a very weak concentration, and to raise it slowly till anesthesia and unconsciousness are produced, thus avoiding struggling, gasping, and coughing, which may seriously interfere with the respiration and aggravate the prospects of the narcosis. But even later on a continued and steady decrease of concentration is rarely indicated, especially in protracted operations, where some manipulations are more apt to arouse the patient than others.

To be able to adapt the concentration of the narcotic vapor exactly and easily to the special requirements which may arise during any phase of the operation, Messrs. Tiemann & Company have constructed under the author's direction an apparatus which has proved very serviceable, and seems to guarantee the greatest possible safety (Fig. 1).

The apparatus consists of a pair of rubber hand bellows by which a continuous stream of air is produced and led through the afferent rubber tube to a piece of metal tubing, which passes through the stopper of the chloroform bottle and opens on a level with a smooth metal plate forming the



inferior surface of the stopper. In the same way the efferent tube is constructed. The openings of these tubes within the bottle can be connected or disconnected by means of a semi-circularly bent metal tube inserted in a vertical metal plate (Fig. 2), that can be turned around a vertical axis by means of a shaft, which passes through the center of the stopper and is fitted with a wash at the top of it. This arrangement enables us either to make the entire stream of air pass over the surface of the chloroform, or to turn it off partly, or even entirely, through the second tube into the efferent one without any admixture of chloroform vapor, thus being a respiration in which not the amount of air that passes the tubes, but only the degree of saturation which it attains within the bottle, is adapted to change.

The efferent tube is connected with the soft rubber mask which is made to fit the face tightly, covering the mouth and nose. Besides the opening to which the efferent tube is connected there is another one which gives an freely free passage to the expired air, and is easily movable while inserted in the opening, making every turn

this time the foot became appreciably worse: it was swollen and excessively painful.

At the time of admittance the patient had an ulcer, with raised edges, on the plantar surface of the right foot, just beneath the metatarso-phalangeal articulations, the opening leading into a sinus an inch in depth, and discharging a thin, sero-purulent matter.

On the 11th of July the patient was operated on, an amputation at the junction of the middle and lower thirds of the leg being done. Soon after the operation the flaps became unhealthy and later gangrenous, and, after removal, healing gradually took place.

On the 29th of July healing was going on, and on the 19th of August the patient was discharged, with a small, granulating surface still present.

Physical Examination (August 5th).—Notwithstanding the patient having been a month in bed, the body is fairly well nourished. There is some wasting of the limbs, the hair is gray, and there is beginning arcus senilis; patient's hearing and eyesight are good, and the mental faculties are normal. He has no pains, and has had none other than described. No symptoms referable to the central nerve system; no girdle sensations or prickling sensations in hands or feet; the tendon reflexes are normal; no ankle clonus; no Argyll-Robertson pupil; and he has had no ataxia of arms or legs. Examination of the right limb above the site of the amputation reveals nothing markedly abnormal; the left leg shows no extra wasting; cutaneous sensibility is plainly diminished to the middle third of both legs, front and back; the pressure sense is present and is apparently not modified; points less than three inches (seven centimetres) apart can not with certainty be identified; temperature sense diminished; cold is more readily appreciated, and is said to cause pain; at times the patient was unable to distinguish between heat and cold; urine negative, no sugar.

Dissection ten hours after amputation. The whole foot is swollen and oedematous; just beneath the second tarso-phalangeal articulation is a small, irregular opening, with inverted edges, and discharging a thin, sero-purulent matter. Dissection into the sinus reveals at its bottom a more or less extensive pocket, in which were found two pieces of bone consisting of a portion of the shaft with its articular surfaces; the articular ends of the second, third, and fourth metatarso-phalangeal articulations were obliterated and eroded and so modified that there remained no articular surfaces, the two portions found in the sinus being apparently the distal end of the second metatarsal and the proximal end of the first or second phalanx.

The bones of the foot were reconstructed and surrounded throughout, the nerves secured separately, the ligaments and the little toe removed intact. Portions of the dissection taken about the bone and nerve portions of the nerves were preserved in Muller's fluid for microscopic study. Portions of the internal and external plantar nerves, the peroneal (1st) and posterior tibial nerves, with surrounding tissue and vessels were treated in Muller's fluid about the same two weeks, and the nerves removed in alcohol alcohol. The portions were treated in alcohol, and the sections were stained by routine method. Wagner, Pal's, with osmium, iron haematoxylin, Van Gieson's permanganic iron haematoxylin, and others.

The section of a somewhat narrow view of the lower third, I will first present this part of the internal tibial nerve. The osseous and connective tissue surrounding the nerve has almost wholly presented an amorphous condition; the structure of the blood vessels were greatly altered, in the peroneal the intima was thickened by new connective tissue; these were

marked proliferation of the connective tissue beneath the endothelium, which seemed to be intact; the media and adventitia were unaltered, save in a few places where slight degeneration of some of the muscle fibers of the media was noticed; the lesion was one of beginning obliterating endarteritis; the veins were similarly modified; the intima was thickened, but to a less extent than in the arteries; the media was also increased in size. The nerve bundle was strongly outlined by an increase of connective tissue in the epineurium, and the nerve fascicles were made more prominent by a corresponding increase in the perineurium, but there did not seem to be much increase in the connective tissues of the endoneurium. The blood-vessels of the fascicles of the nerve bundle were slightly modified, showing the same lesions as were found in the outside vessels to a minor degree.

The axis cylinder of the nerve fibers was degenerated, there being found no axis cylinders, with one or two exceptions, in the whole section; the myelene sheaths were degenerated in places, but generally were apparently collapsed and irregular in shape and definition; here and there portions were stained by the picric acid of the picro-acid fuchsin mixture, showing points of degeneration. At places the endoneurium was increased in amount to fill up the space made by the collapse of the myelene sheaths and the loss of the normal axis cylinders. With but a few minor exceptions the study of the posterior tibial nerve and the internal and external plantar nerves showed practically the same lesions; in both the internal and external plantar nerves and the posterior tibial nerves, portions were regenerated; axis cylinders seemed to be present. With these exceptions the description of the anterior tibial will serve for the other nerve study.

The tissues of the foot showed a condition which was of some interest, especially when taken in conjunction with what we know of experimental perforating ulcer of the foot. The stratum corneum was found greatly thickened, also the stratum lucidum; the rete Malpighii entered deeply into the tissues of the foot, the intervening papillae being elongated and somewhat tortuous. The connective tissue was loosely packed, the fascicles being somewhat isolated and having between them quantities of leucocytes; the muscular tissues also showed a looseness of arrangement, and the minute nerves seemed to be degenerated.

In 1832 Volkmann described a peculiar condition of the bones of the foot to which Vesicque gave the name of *and albuginea perforans*.

Since that time to the present numerous cases have been reported with more or less extension and with varying degrees. The writer has been enabled to find three graphical records of some two hundred and thirty cases, referring to the subject upon the original description in Vesicque's *Bulletin* (supra) appended.

The cases that have been observed all in all seem to be of the chronic type, but of the night happen, with exception. They are termed by *Dr. Vesicque* *Perforans*. 1. The theory of osseous pressure. 2. That of absorption of the blood vessels. 3. That of various disturbances. Dupuy and Maréchal in 1853, and others in 1855, considered these various theories, by the 1855 that was then about upon the subject. Severin and Baillie in 1855 again took up the question and considered the various theories and help, Petrus and Villard, in 1856, resumed the discussion. If any of these articles are consulted it can be readily seen that there exists still some doubt upon the subject of per-

logiques de l'affection connue sous le nom de mal plantaire perforant, Paris, 1871.

Mazzoni, C. Ulcera perforante del piede; escissione; cauterizzazione; guarigione. *Clin. chir.*, Mazzoni, Roma, 1876, iii, 67, 69.

Mazzoni, C. Ulcera neuro-paralitica alla faccia plantare dell'alice del piede destro; escissione e cauterizzazione; guarigione. *Clin. chir.* (Mazzoni), Roma, 1881, vi-vii, 161.

Ménière, E. L. *De pedum ulceribus*, Wittenbergae, 1802.

Michaud. Note sur l'état des nerfs dans l'ulcère perforant du pied. *Lyon méd.*, 1876, t. xxi.

Mirapeix. *Du mal perforant*, Montpel., 1883, 50, p. 40, No. 55.

Mitchell, Morehouse, and Keen., *Gunshot Wounds and Other Injuries of Nerves*, Philadelphia, 1864, p. 83.

Mondan. Ulcérations singulières des pieds ressemblants au mal perforant. *Mém. et compt. rend. de la Soc. méd. de Lyon*, 1878-1879, xviii, pt. 2, 100.

Monod, C. Du mal perforant. *Progrès méd.*, Paris, 1884, x, 20.

Montaigne, A. *De l'ulcère arterio-atheromatique du pied (entièrement dit mal perforant)*, Paris, 1868.

Montil, S. Ulcera perforante ô mal perforante del pie. *Rev. Med.-quir.*, Maracaibo, 1883, 4-1, No. 5, 7, 10.

Montmeja, A. Mal perforant du pied. *France méd.*, Paris, 1873, xx, 124.

Morat. *Avant. gen. de med.*, 1873.

Morat. Section du nerf sciatique poplitée interne par un oslet d'obus; mal perforant des deux premiers orteils. *Lyon méd.*, 1870, xxii, 84, 121; also *Ren. méd.-phot. des hôp. de Paris*, 1876, viii, 81, 85.

Moré, Lavalee. *Gaz. des hôp.*, 1860, p. 436.

Murer, P. Note sur un cas de mal perforant du pied accompagnant l'ataxie locomotrice. *Gaz. heb. de méd.*, Paris, 1882, 2 s., xiv, 495.

Moritz, E. Ulcer Plantar-Geschwür. *St. Petersburg Med. Zeitschr.*, 1875, n. f. v., 1-22.

Morpugo, B. Sur les processus histologiques consécutive à la transformation cancéreuse. *Arch. d'histologie de biologie*, xvii, fasc. iii, 432.

Morrell. *Fussgeschwüre*. Adaptation des Untersuchungen bei diesen Krankheiten. *In: J. k. k. Kaiserl. St. h. d. h. Stftung in Wien*, 1871-1873, 222.

Mott, V. A Case of Circular Callosus Ulcer in the Heel of the Foot. *Med. and Surg. Rep. N. Y.*, 1818, 3, 119-121.

Murrie. Mal perforant plantaire. *Bull. de la Soc. anat. de Paris*, 1866, x, 580-581.

Nenlo. *Lancet*, 1871, vol. i, p. 144.

Nélaton. Affection singulière des os du pied. *Compt. des hôp.*, Paris, 1852, xxv, 13.

Nicolas. Mal perforant du pied. *Compt. des hôp.*, Paris, 1850, xviii, 485.

Ogden, J. A Case of Perforating Ulcer of the Sole of the Foot. *Lancet*, London, 1870, ii, 13.

Otto, K. Anomerie des mal perforante des pieds. *Ann. med. de Neuch.*, Nappé, 1867, 15, 18-21.

Ottway, W. A Case of Hospital Gangrene Following Perforating Ulcer of the Foot. *Trans. and Surg. Soc. Buff. Med. Soc.*, 1881, 144.

Ottway, W. Perforating Ulcer of the Foot in a Child. *Hospital*, London, 1881, i, 911.

Pagani. Mal perforant du pied. *Bull. med. de Lyon*, 1873, xxi, 124-125.

Pagani. Mal perforant du pied. *Uyres méd.*, Lyon, 1873, 1, 124-125.

Parona, F. Note cliniche sulla cura del mal perforante del piede. *Gazz. d. osp.*, Milano, 1882, iii, 755, 763.

Paul. *Krankheiten des Bewegungapparates*, Leibr., 1861, 479.

Peau. Du mal perforant plantaire. Symptômes et diagnostic. *Leçons de clin. chir.*, etc., 8vo, Paris, 1882, 1, 33.

Peau. Mal perforant du pied; artérite chronique. *Bull. de la Soc. de chir. de Par.*, 1864, 2, s. v., 79, 81; *Gaz. des hôp.*, 1863, p. 116.

Peraire, M. Du mal perforant palmaire. *Arch. gén. de méd.*, Paris, 1886, ii, 26-41; *Arch. gén. de méd.*, Paris, 1886, ii, 173, 193, repr.

Perforating Ulcers of the Foot. *N. Lond. or University College Hosp. Reports*, 1885, London, 1886, 24-26.

Petel. Une observation de mal perforant d'origine mécanique. *France méd.*, Par., 1878, xxv, 473.

Piffard, H. G. Perforating Disease of the Foot. *Med. Rec.*, vol. i, p. 125.

Pitay, E. *Contribution à l'étude de la pathogénie du mal perforant du pied*, Paris, 1875.

Pitres, A., et L. Vaillard. Altérations des nerfs périphériques dans deux cas de maux perforants plantaires et dans quelques autres formes de lésions trophiques des pieds. *Arch. de phys. norm. et path.*, Paris, 1885, 3 s., v, 208-252.

Polak, J. E. Chronische Fussgeschwüre. Flannell-Druckverband. *Zeitschr. d. k. k. Gesellsch. d. Aertze. zu Wien*, 1849, t. 455, 458.

Pollaillon, M. *Bull. de la Soc. d'anat. et de phys. de Bordeaux*, 1883, p. 78.

Pollaillon. Mal perforant du pied consécutive à une neurite sciatique produit par une injection interstitielle d'éther. *Union méd.*, Paris, 1884, 3 p., xxx, vii-791, 793.

Poncet. Mal perforant et lépre antonine. *Gaz. heb. de méd.*, Paris, 1872, 2 p., ix, 51, 54; also *Rec. de mém. de méd. mil.*, Paris, 1873, 3 s., xxix, 566, 572; et *Rec. de mém. de méd. mil.*, Paris, 1864, iii série, p. 306.

Potier-Duplessy. Mal perforant du pied ayant nécessité la désarticulation du 5^e metatarsien. *Rec. de mém. de méd. mil.*, Paris, 1865, 3 p., xiii, 476, 479.

Pronk, D. W. *Iets ocer malum perforans pedis*, 'SGravenhage, 1884.

Pryce, T. D. Perforating Ulcer of the Foot. *Proc. Med. Journ.*, Leicester, 1887, vi, 203-206.

Puel, G. Quelques considérations au sujet de l'étiologie du mal perforant du pied. *Soc. de méd. d'Amers*, 1875, xxxvi, 481-492.

Queussac, E. F. *Du mal plantaire perforant (considérations sur sa pathogénie)*, Paris, 1875.

Reilly. *Lancet*, vol. i, 1871, p. 200.

Rieci, T. *Dell' ulcera perforante del piede*, Spallanzani, Modena, 1873, vii, 131, 131.

Ribaud. *Compt. des hôp.*, 1864, 18-17.

Ribaud. *Ann. des hôp.*, 1866, p. 11.

Ribaud, J. K. A Case of Mal Perforant of the Foot. *Ann. Med. Chir.*, 1866, 1866, 1867.

Ribaud. *Ann. des hôp.*, 1866, 1866, 1867.

Ribaud, O. *Ulcère Perforant du pied*, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 2960, 2961, 2962, 2963, 2964, 2965, 2966, 2967, 2968, 2969, 2970, 2971, 2972, 2973, 2974, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3

Savory, W. S. On Perforating Ulcer of the Foot. *Brit. Med. Jour.*, London, 1879, i, 587.

Schäfer, H. *Ueber das mal perforans des pied.* Thèse. Dissert., Kiel, 1874.

Schäfer, H. Nutzen des äusserlichen Anwendung des Arseniks mit Calomel bei einem corrodirenden Fussgeschwüre. *Stettin, d. Monatsschr. Wiss. versch. d. ges. Med.*, Leipzig, 1840, n. f., xiii, 225-227.

Schönmacker, A. N. Pathologisch-anatomische Mittheilungen über das sogenannte "Mal perforans du pied." *Arch. für klin. Chir.*, Berlin, 1874, xvii, 144-153, 1, pl.

Schwann, V. *Ziemsch's Handb.*, xiv.

Sellier. *Chirurgie des maladies de la cheville.*, Paris, 1868, i, p. 625.
Sellier. Ulcère perforant du pied. *Gaz. des hop.*, Paris, 1865, xxxviii, 497.

Smith, N. *Lancet*, 1870, vol. ii, p. 468.

Sonnenberg. Zwei Fälle von Malum perforans pedis. *Deutsche Ztschr. für Chir.*, Leipzig, 1873-74, iv, 408; 1875-76, vi, 261; also *Trans. Gaz. lek. Warszawa*, 1875, xix, 41, 52.

Soulages, C. *Le mal perforant, sa pathogénie*, Paris, 1874; also Paris, 1875.

Stallan, F. A. Perforating Ulcer of the Foot and its Connection with Diseases of the Nervous System. *Brit. Med. Jour.*, London, 1883, ii-1222.

Stannier. Heilung eines alten Fussgeschwüre. *Allg. med. Ann. Altsch.*, 1803, 122, 125.

Stendener, F. *De lepra anæsthet.*, Habilitationsschr. Halle, 1867, p. 18.

Strenbel. Editorial. *Schmidt's Jahrbuch*, 60, 136, sec. 197, 1866; *Hospitals Tidende*, 1866, No. 16.

Suzanne. Note sur les lésions histologiques de l'ongle du 1^{er} orteil du mal perforant. *Bull. de la Soc. anat. de Paris*, 1882, 4 p., viii, 145; also *Progrès méd.*, Paris, 1882, x, 993.

Tosini, A. Disarticolazione medio-tarsiana o tenotomia a Achille per ulcera perforante in piede equino-varus. *Gazz. med. ital. prov. Veneta*, Padova, 1862, v, 469.

Toussaint. Mal perforant aux deux pieds chez une femme. *Ann. anat. et méd.*, Paris, 1882, lvi, 1175, 1177.

Treves, F. Perforating Ulcer of the Foot and Progressive Locomotor Ataxia. *Lancet*, London, 1882, ii, 653.

Tullier et A. Chipault. Notes cliniques sur le mal perforant. *Arch. gén. de méd.*, Paris, 1891, ii, 257, 413, 685.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Ullrich, H. *Ueber das mal perforans des pied.* Thèse. Bonn, 1874.

Zannini, M. Dell' ulcera perforante del piede, Tesi di laurea. *Bull. della Soc. med. di Bologna*, 1885, 6 p., xvi, 363, 381, et repr.

Zucchera, G. Sull' ulcera perforante del calcagno. *Progress. med.*, Napoli, 1889, iii, 258-269.

MEDICAL PAPYRI OF ANCIENT EGYPT

COMPARED WITH GREEK AND ROMAN AUTHORS."

SUMMARIZED FROM THE GERMAN.

By F. B. STEPHENSON, M. D., U. S. N.

DURING a cruise on the Asiatic station, 1891-'94, it was the writer's good fortune to meet the genial and scholarly Heinrich L. Emil Lüring, then engaged in educational and literary work at Singapore. Our talks on Sanscrit, Malay, Chinese, Japanese, and general linguistics naturally led him to think of his own special studies. One of these is the address given when he received the degree of Doctor of Philosophy (*philosophischen Doctorwürde*) from the University of Strassburg. By his kindness I have been enabled to possess a copy of this dissertation (published in 1888); a description thereof is herewith offered and an abstract of its subject matter.

The entire essay comprises a hundred and seventy pages, its German text broken by figures, notes, quotations, etc., in hieroglyphics, Coptic, Hebrew, Arabic, Greek, Latin, French, Italian, English, and Swedish, with references to many an authority in the world of letters and criticism.

The introduction informs us that Homer, Herodotus, Diodorus, Clement of Alexandria, Pliny, and Galen wrote on the astounding wisdom of the Egyptian priest physicians, while mediæval students filled volumes with their translations and commentaries in regard to the early life of the healing art, picturing its condition on the shores of the Nile.

In the first chapter the author means to show by recent discoveries that Galen was not very accurate when he set down primitive Egyptian medicine as "nonsense" (*trö Apocrypha*). From a comparison of older papyri with those more lately found it appears that the scribes of that period may be charged with great carelessness and unpardonable haste. Passing by a critique in detail, he considers in particular the *Ebers Papyrus* of the University Library in Leipzig as being unusually well written, comprehensive, and the best preserved of such medical records. The one hundred and eight pages, in hieratic characters, contain the title of a collection of Egyptian materia medica. On the reverse of the first leaf is a calendar, from which it is learned that the origin of the manuscript was in 1850 B. C. Moreover, the technique of the writing, as well as the type of expression, indicate its composition later than the oldest document in question being merely copy.

The Latin refers to the "invaluable" text not yet changed "text, compiled from previous authors, as 'hieratic,' or 'hieroglyphic'" to use a modern term. (Hereon we may see the hieratic origin of the "healing art," and learn that medicine then partook of the "infallibility" yet attributed,

ment of many affections was practically the same as now—by injections, clysters, various substances applied to the genitalia, bandaging, etc. Nearly all the materials used by us were employed in the same way, as shown by Greco-Roman prescriptions, a great portion of which were taken either piecemeal or bodily from the Egyptians. A sign of pregnancy is given as follows: The eyes appear contracted and sunken; the sclerotic is not so white as usual, but looks more bluish. Various hocus-pocus means were thought to be of value in ascertaining the fertility or sterility of man and woman, also the sex of the child yet unborn.

The author refers in chapter sixth to his perplexity in finding an exact equivalent for the hieroglyphic names of plants, minerals, and other things serving as medicaments. It is stated that there are numerous errors of rendering in Dr. Wiedemann's *Collection of Egyptian Words*, translated or paraphrased from classic authors, published in Leipsic in 1883. In the ancient manuscript of Dioscorides are found the synonyms of such terms in Roman, Dacian, Gallic, Punic, Egyptian, Etruscan, and Dardanian, with expressions of Zoroastrian priests and other magi. The lexicon of Pamphilus is as lacking in accuracy.

We read in chapter seventh, the last, that the compounding of medicines and their chemical relations were the secrets of certain priestly classes. Even the name of the science "chemistry" seems to be derived from this fact, inasmuch as the word may be translated "the hidden" or "dark art." In mixing drugs, the "precious rod" of silver or gold was held to be specially efficacious. The inhalation apparatus, essentially the same as that of to-day, was doubtless the source of the distillation retort.

Frequent reference is made to the divine origin of remedial measures and means. This historic people lived close to Nature in her myriad forms of manifestation. Flowers, fruits, and other modes of life, together with various phenomena more or less vaguely comprehended, were intimately associated in every phase of their existence.

The difficulties of such a study as this subject implies are acknowledged; and Dr. Lüring hopes, indeed, that others may be incited by his initial effort to more extensive and successful investigation. He points out mistakes in some previous translations, stating reasons, admitting the while his inability as yet to furnish a correct version.

With all the labors of thorough and ambitious students, much is yet to be done, and still remains for the labors of the future.

FORCIBLE APEX EXPANSION IN INCIPIENT PHTHISIS.

BY H. H. WEAVER, M.D.

(Continued.)

It is generally admitted that a tubercle, at its early stage, is a localized area of inflammation of the lung tissue. It may be considered as a localized area of inflammation, usually found in the upper apical portion of the lung, as the result of a chronic irritation of the air cells. The most common cause of this process is the infection of the tissue

by tuberculous show that the disease is most active and frequent among those who occupy a stooping position which drags down the upper chest by the weight of the arms and diminishes the capacity of the apices. This is a sufficient explanation for the location of the disease in the apical tissue.

Hyperamia of the parenchyma, together with the exudation of a thick gelatinous and albuminous fluid into the alveoli with large and small cells and some red blood-corpuscles, go to make up the suitable soil or consolidated area. Some time during the existence of this consolidated area the tubercle bacillus gains access and begins its destructive work. The miliary tubercular deposit probably comes later in the progress of the disease.

Dr. Prudden has shown in a recent article that when other pyogenic germs infect the tubercular lung the process of destruction is greatly accelerated, and cavities form rapidly. Before the destruction of tissue begins the consolidated area is composed mostly of alveoli plugged with inflammatory or catarrhal products, which may or may not be infected with tuberculosis; and the great danger to the patient is that they may become tubercular. Now, if these plugs can be blown out of the alveoli and a forced use of the alveoli made, they will soon resume their normal condition. Every cure of phthisis is the result of an increased respiratory activity and capacity, which is directly antagonistic to the development and extension of the disease.

Dr. T. J. Mays, in an excellent article in the *New York Medical Journal* for March 10, 1888, has shown that apex expansion or ventilation is the most important factor in the cure of incipient phthisis. This condition is promoted in the highly attenuated atmosphere of high altitudes. The whole lung capacity, including the apices, must be used in order to supply the required oxygen. This increased use of the air cells fills them with air and gradually expels the plugs of debris, thus limiting the destruction and restoring healthy conditions.

Now, as the disease is confined to the apex from the start, can not this great end be accomplished by artificial means, or rather voluntary effort? Exercises in pulmonary gymnastics intelligently directed toward greater apical expansion and increased chest capacity will give the very best results. This line of treatment may be supplemented by the use of the pneumatic cabinet at the office.

A cure after this manner is radical and permanent, as there is no debris left in the alveoli to favor the return of the trouble.

A careful diagnosis should be made in the beginning. In too many cases the patient is told that he has a little bronchitis; valuable time is wasted and the golden opportunity lost. When the destructive processes once begin, the chances are greatly against recovery. Treatment should be instituted as soon as the symptoms first show themselves, whether a distinct area of consolidation can be discovered or not; for often it is discoverable only after a considerable area of tissue has become infiltrated.

The method I have found most useful is not only full breathing, which has been recommended in various ways, but after a full inspiration the breath is held for a moment

by closing the glottis. The effect is increased if, during the holding of the breath, the lower chest is compressed with the hands. After a few weeks the inspirations become much fuller and the tension developed greatly increased. The arms should be raised in order to get the fullest inspirations. These efforts at forced expiration should be continued for ten to fifteen minutes every two hours during the day—before arising in the morning and after retiring at night. The holding of the breath I consider a very important point in the treatment. It will require some practice to be done properly so as to give the best results. It should produce a ballooning of the chest and consequently of the air cells themselves. The immediate result will be an increased amount of oxygen in the blood—a strengthened heart's action and a facilitated expectoration, which alone gives great relief. The air cells will be kept almost constantly open and ventilated and their plugs of *débris* expelled, old pleuritic adhesions stretched, and the chest visibly enlarged. The chest expansion will be increased in a short time and the progress of the disease inhibited. This treatment is, of course, applicable to the quiescent periods of the disease. The patient should be under the constant observation of the physician. In the beginning and for the first week the efforts should not be too violent or some pleuritic pain may be produced. During and for a week after hemorrhage has completely stopped, pulmonary gymnastics should be suspended.

It will be observed that the means for removing the local lesion of consumption are purely mechanical and consequently certain of results. Removal of a nasal obstruction is mechanical, and is very often necessary in order to facilitate the entrance of air into the lungs and check the catarrhal tendency. Increased vital capacity is the great desideratum, without which there can be no cure of phthisis.

The treatment by differentiation of air has about the same effect on the lungs, but one or two treatments only will not be sufficient to keep the collapsed or plugged alveoli ventilated.

Noble Smith (*Practical Medical Journal*) has suggested a time in which the secretions are drawn back, arms supported, and the stoop prevented with good results in cases seen early enough.

A secret which prevents abdominal breathing, and consequently prevents the chest from rising. The remedy may be used to assist the equality of the chest, and the maintenance of the normal development of respiratory power.

To overcome the atrophic atrophy about the chest and to increase the patients' I have the patients with the usual London style and which have not seen them regularly. As protect the patient against sudden changes of position, in every other position and have the chest in a position of a chestnut-like posture over a position without strain. I attached a position of the chest and lower chest in position in the chest in position and have not seen the patient in position. At the same time proper ventilation should be maintained by using a vacuum, the vacuum and support of the chest.

All this requires more work and persistence than simply taking medicine, and patients need to be constantly encouraged by the positive assertion that they will recover their health if they use the means.

129 SOUTH STREET.

BUBONIC PLAGUE IN CANTON.

By MARY W. NILES, M.D.

CANTON, CHINA.

THE epidemic now raging in Canton is characterized by glandular swellings. It is identical with the great plague of London. Heretofore it has not been endemic in Canton. Dr. Kerr has been here for forty years, and has never seen it. It is endemic in the province of Yunnan. When it began there is not known, but the first severe epidemic was about 1850, according to one author; some say it has existed there for the past six centuries; some Chinese say it came by caravans from Burmah. Twenty years or more ago it made its appearance in Annam. It then spread into two adjacent districts belonging to Canton Province and to the province of Kwang Sai. Pakhoi, a treaty port in one of these districts, has had it for twelve years and perhaps longer. Four years ago the plague arrived at Mui Luk, about two hundred miles this side of Pakhoi. Last year it was seen for the first time in the city of Yeung Kong, over a hundred miles beyond Mui Luk. This year it has reached Canton, two hundred and more miles farther to the northeast. It was found to travel more along the coast lines. Twenty years have thus been occupied in marching between five and six hundred miles. To me it is most probable that the plague took its course from Yunnan down to Annam, which is the most natural way for traffic, and then went up the coast. All the places to which the plague has come continue to have it, returning in its season more or less every year. It commences in some places in the winter and continues till midsummer. In Canton it commenced as early as January to my certain knowledge, as I saw my first patient January 16th. There must have been few cases, comparatively speaking, for I did not see another till the last of March. I then heard for the first time that there was a very fatal epidemic in the city. The course that the disease has taken in Canton is somewhat erratic. At first it was confined to certain streets inside the city walls. It then spread directly along the wall, at the foot of which is a filthy canal meagerly supplied with water. Later it was to be found in all districts. But it would not come to the city for a time and then visit the border and move on to the city. While violent in the western suburbs, it was reported that there was no plague from the city south. A house was reported free for some weeks, and then the plague began to reappear in the district with new force. The method appears inexplicable.

Professor Semple, of Japan, who made the study of the plague in the city, and was the first to study the plague during the outbreak. He found the plague in the blood. They are not with the plague, such a disease, as has not been

seen in any other disease. He is pursuing his investigations with reference to prevention and treatment. How the poison really enters the system is an open question. An infant nursed the breast of her mother, who had the disease fully developed, dying the next day, and yet the child had no symptoms, and the mortality of the plague is greatest among children. A man who owned a small ferryboat rented it for dying patients. At one time the body of a woman lay in the bottom of his boat all night while he slept on a bed made of boards laid a few inches above the dead body. He received no harm. Of all who have doctored or nursed patients, I know of none who have taken the disease, except as they had been already exposed in an infected house. Unsanitary surroundings or direct inoculation appear to me to be necessary to the development of the plague. The more unsanitary the surrounding, the more virulent the attack. In an infected house the rats die first. The patient is usually attacked very severely. The temperature generally rises to 105° F., not infrequently to 106° , and sometimes to 107° . There is very apt to be a petechial eruption. Generally the glands of only one region are affected, the inguinal glands on one side most frequently. Next in frequency are the cervical glands, and a smaller number of patients are affected in one axilla. In one patient the glands in the popliteal space were the only ones affected. These swellings are usually very painful, and, if the patient survives, in many cases go on to suppuration. There is generally twelve hours of fever before the affection of the glands appears.

There generally is a dull, apathetic countenance. There may be stupor or delirium, or the mind may appear unaffected, the countenance not indicative of the deadly malady. Often the patient will walk when extremely ill and almost unconscious. Some have fallen dead in the streets. Passengers have walked on board steamers, nothing unusual being noted in their appearance by inspectors, and died on board in a few hours. There is apt to be a remission in the severe symptoms the second day, but the third day the fever again rises and death ensues. If the patient shows any signs of improvement the fourth day, the case looks hopeful. As death approaches, purple spots may appear on the body. Hemorrhages also may occur from the mucous membrane of the nose, throat, rectum, and vagina, or from the gums. Pregnant women attacked with the

plague have been reported to have delivered living children. The infant may be born full-term, or it may be born prematurely, and it may be born dead. In the beginning of the epidemic it is reported that many children were born with the disease.

In the beginning of the epidemic it is reported that many children were born with the disease. In the beginning of the epidemic it is reported that many children were born with the disease. In the beginning of the epidemic it is reported that many children were born with the disease.

THE NEW YORK MEDICAL JOURNAL, A Weekly Review of Medicine.

Published by
B. S. DILLON & Co.

EDITED BY
FRANK P. DILLON, M.D.

NEW YORK, SATURDAY, OCTOBER 13, 1894.

THE NEW TREATMENT OF DIPHTHERIA.

THERE is a very general impression that international medical congresses have had their day, and we confess to having shared in this feeling, but it must be allowed that the recent International Congress of Hygiene and Demography, held in Budapest, has gone far to neutralize the notion. Of not the least influence in this direction was the discussion of the antitoxine treatment, or serotherapy, of diphtheria, and among the most striking features of that discussion was a paper presented by M. Roux, a summary of which we find in the *Presse médicale* for September 15th. M. Roux remarked that in 1891 he had instituted a series of experiments on animals and children with regard to the treatment of diphtheria with antitoxine serum. They had been made at the Pasteur Institute, with the help of M. Martin and M. Chaillu. The toxine had been produced by cultivating the virulent diphtheritic bacillus in bouillon in contact with the air. Under ordinary conditions, he said, these cultures had to be maintained for some months at a temperature of 100° F., in order to allow the poison to accumulate in them. After these cultures were completed they were filtered on a Chamberland filter, and the clear liquid was kept at the ordinary temperature in well-corked bottles and sheltered from the light. When the toxine was obtained, the animal whose serum was to constitute the antitoxine must then be accustomed to it, but, as the process might produce serious accidents, the dose must be attenuated. Fränkel had modified the toxine by heating it to a temperature of 150° F., and Behring had mixed it with iodine trichloride. A third of its weight of Gram's solution was to be added before using, and after a few minutes the toxine was injected under the skin. A mouse would bear at this stage half a cubic centimeter of the toxine. At the end of a few days the injections were renewed and continued for some weeks. The dose of antitoxine serum was increased as the production of iodine diminished. Eventually the toxine might be given pure. The animal must be watched constantly, and the injections interrupted if any serious symptoms should develop. In these experiments M. Roux and his associates used only

one kind of serum, the serum of a very young animal, fresh and possibly given with some extract in the diphtheritic poison, and the presence of containing immunity or that would be caused by the antitoxine serum. It was the same with each, which might be because no repeated antitoxine was given. Of all antitoxine applied during the early stages of the disease, the serum of the young animal was the

containing it bore the toxine much better than any other animal mentioned. In many cases from two to five cubic centimetres of strong toxine had been injected in the beginning, and caused only a passing fever and local oedema which had promptly disappeared. M. Roux and M. Nogard had also observed a difference on horses immunity against diphtheria because their experiments with regard to tetanus had shown that horses' serum, even in considerable doses, was harmless for the laboratory animals and also for man. Injected under the skin, it was absorbed in a few minutes without causing any local reaction. Moreover, nothing was easier than to draw large quantities of blood from the jugular vein of a horse, and from this blood a perfectly limpid serum was extracted. The speaker had seen horses from which blood had been drawn more than twenty times, and the vein had remained flexible and also permeable. The antitoxic power of their serum was very great, too, and it was easy to increase it still more. The horse, then, was to be preferred to other animals for the preparation of antidiphtheritic serum. On account of its indifference to the diphtheritic poison the experimenter avoided the difficulties that were found among more sensitive animals. In animals that received this antitoxine, immunity was acquired on the spot, so to speak, but it did not last; it disappeared gradually, in a few days or weeks, according to the power and the amount of the serum administered. This transient immunity was very different from that, painfully acquired, but lasting, which followed carefully given and repeated injections of the diphtheritic poison.

With regard to the action of serum in diphtheria of the mucous membranes, M. Roux said that the majority of the experiments in serotherapy had been made on animals inoculated under the skin. Behring had cited some cases in which diphtheria had been inoculated in the mucous membranes. In regard to the preventive injections of serum, female guinea-pigs always resisted if a sufficient dose of the serum was injected before the mucous membrane of the vagina became inoculated. In all cases a false membrane formed. From the second day, the local lesions diminished, the false membranes became detached, and the repair of the mucous membrane set in.

With regard to serum injected after inoculation, if the false membrane was already well developed, and the redness and tumefaction of the vulva were very pronounced, an injection of a dose of from a few drops up to a teaspoonful of the serum at the internal os of the vagina, and the vaginal canal, would ensure a good recovery. The rapidly with which the disease receded if the serum was injected at this stage was due to the fact that the serum was injected into the blood stream, and not into the tissue of the false membrane. On the other hand, if the disease was not so far advanced, an injection of a few drops of the serum into the vagina, and a few drops into the blood stream, would ensure a good recovery. When the disease was so far advanced that the serum was injected into the blood stream, the recovery was not so rapid, and the disease was not so easily cured. When the disease was so far advanced that the serum was injected into the blood stream, the recovery was not so rapid, and the disease was not so easily cured. When the disease was so far advanced that the serum was injected into the blood stream, the recovery was not so rapid, and the disease was not so easily cured.

Cases of diphtheria in which special bacilli were associated

with certain bacteria, notably streptococci, were among the gravest known, and in these cases it was questioned whether antidiphtheritic serum was capable of bringing about recovery. It was a subject of great interest, said M. Roux, because of the frequency of these complicated forms among children. M. Funck thought that the simultaneous infection of streptococci and a specific bacillus indicated an increase of the production of the diphtheritic toxine, and that the presence of the streptococcus did not impede in any way the neutralizing action of the serum on the diphtheritic toxine.

M. Roux had inoculated in the trachea in order to realize as much as possible the conditions usually met with. After tracheotomy, the rabbits received in the trachea a mixture of streptococci and diphtheritic bacilli. The streptococci had been taken from a child who had been attacked with diphtheria; they were in a pure state, did not disturb the bouillon, and were not very virulent for the rabbit. Two cubic centimetres of a recent culture in bouillon, injected into the veins of a rabbit, killed it in ten days. One cubic centimetre introduced under the skin caused an erysipelatous patch, with passing fever but no serious constitutional effects. The same dose, introduced into the trachea, gave rise to a slight rise of temperature without pronounced uneasiness. The diphtheritic bacillus that M. Roux had associated with this streptococcus was virulent. In cases of diphtheria associated with streptococci, the serum rarely brought about recovery, not because there was a formation of a larger quantity of diphtheritic toxine, or because the antitoxic action of the serum was impeded, but because the cells attacked by the poison of the streptococci no longer felt the stimulation of the antitoxine. In these cases, asked M. Roux, might not better results be obtained by injecting simultaneously the antidiphtheritic serum with the serum of a rabbit that was proof against erysipelas?

M. Roux undertook the treatment of diphtheria among the children at the *Hôpital des enfants malades*. No change was made among the patients, and the general care and the local treatment were not modified. In this manner results were brought about easily comparable with those previously obtained. Out of two hundred children treated with the serum, only seventy-eight had died, a mortality of twenty-six per cent. In the same hospital the mortality had formerly been fifty per cent. These results, said M. Roux, show the value of the antitoxic treatment. At the first moment, a small amount of serum, the dose has been varied, could not suffice. As the child recovered, from a few drops of serum up to a gramme, which quantity sometimes became a gramme. The quantity of blood injected varied from one to two, and a small child could not take more than one gramme.

At the same time, a report of the *Hôpital des enfants malades*, September 1893, M. C. Laffont, assistant apothecary, M. Roux's communication, says that if a child was not able to swallow the antitoxic serum, it could be injected into the veins. In April, 1894, Laffont and Roux published a note describing the treatment of diphtheria by injection. In 1894, Laffont, Roux, and Roux, in a note published in the *Revue médicale*, said that the antitoxic serum was not only effective in the treatment of diphtheria, but also in the treatment of erysipelas, and in the treatment of other diseases.

The mortality in the cases where tracheotomy was not necessary was 29.6 per cent. If the disease had been treated from the first day by this method, the number of recoveries would have increased to ninety-seven per cent. Where tracheotomy was performed, the mortality was forty-four per cent. The most recent German statistics showed that the mortality fell from fifty-three per cent. to twenty-eight in cases where the serum treatment was employed. Behring was convinced that the mortality would not exceed five per cent. if the children were treated by this method within the forty-eight hours following the onset of the disease. To M. Roux belongs the credit of introducing this method into France, and the statistics that he obtained in his experiences at the *Hôpital des enfants malades* are very nearly in accordance with those of the German physicians. It seems that the results obtained for several years in Germany are so conclusive that the municipality of Paris has decided to erect a laboratory near one of the children's hospitals for the special purpose of making antitoxic serum to be used in diphtheria.

DR. OLIVER WENDELL HOLMES.

The silver cord is loosed, the golden bowl is broken, the man has gone to his long home, and the mourners go about the streets! It would be trite to say that it is with profound regret and with a sense of irreparable loss that we refer to the death of Dr. Oliver Wendell Holmes, professor, poet, and, if autocrat, so gentle and genial in his autocracy that none considered it irksome.

Born on August 29, 1809, the son of a Cambridge clergyman, he grew up in an atmosphere of learning and culture. He has somewhere said that the education of a gentleman should be begun three generations before his birth, and Oliver Wendell Holmes's life testified that his ancestors had sufficiently appreciated that fact.

Educated in Cambridge schools, in Phillips Academy, and in Harvard University, he was graduated from the latter in the class of 1829. Subsequently he spent a year in the Dane Law School at his old mother's, but in 1830 he abandoned law for medicine and went abroad in 1833 for a two-years sojourn in the Paris hospitals. He took his medical degree at Harvard in 1835.

He was the first to occupy a position of anatomy and physiology in Dartmouth College, a position he subsequently resigned to engage in the practice of his profession in Boston. In 1847 he was elected professor of anatomy in the Harvard Medical School, and held that chair until November 18, 1882, when he delivered his farewell address.

His literary production, especially his last ones, covered by his literary success, and whose fame is mentioned in a sentence as that of the author of graceful poems on the nature of spiritism, of prose poems, than as that of a physician, and his personal influence, especially upon Harvard medical students during his thirty-five years as a professor, his critical and comprehensive observations, was engaged in the

study of medical subjects. His investigations on Indigenous Intermittent Fever in New England gained one of the Boylston prizes in 1836, and in 1837 his essays on The Nature and Treatment of Neuralgia and on The Utility and Importance of Direct Exploration in Medical Science gained both the Boylston prizes. He edited in 1837, in association with Professor Jacob Bigelow, Marshall Hall's *Principles of the Theory and Practice of Medicine*.

His greatest work was his essay on The Contagiousness of Puerperal Fever, read before the Boston Society for Medical Improvement in 1842, of which he subsequently wrote: "When, by the permission of Providence, I held up to the professional public the damnable facts connected with the conveyance of poison from one young mother's chamber to another's—for doing which humble office I desire to be thankful that I have lived, though nothing else good should ever come out of my life—I had to bear the sneers of those whose position I had assailed, and, as I believe, have at last demolished, so that nothing but the ghosts of dead women stir among the ruins." This paper, reprinted in 1843 as a pamphlet, was republished in 1855 with the title *Puerperal Fever as a Private Pestilence*, and again in 1883 as one of the papers in his volume of *Medical Essays*. His essay on Homeopathy and its Kindred Delusions, published in 1842, is a trenchant and logical analysis of a pseudo-science.

He was a contributor to the *New England Quarterly Journal of Medicine and Surgery* and to the *Boston Medical and Surgical Journal* during the active years of his professional career. He was among the first members of the American Medical Association, and, while not a delegate to the Fourth National Sanitary Convention, he contributed to the social features of that meeting in his poem Hygeia.

Long before he relinquished his professorship he had given up general practice, and yet the literary work that made him famous was accomplished during daily periods of but three hours. With the increased leisure at his command, although in his seventy-third year, he devoted himself to literary work. He once said: "When I see the long row of volumes that bear my name, it appalls me to think of the number of shelves I should have filled had I been as diligent for a long series of years in literary labor as I was in acquiring and imparting scientific knowledge." Those that love his works will probably concede that, while he might have produced more books, and even books of equal merit, he could not have written better books than those that have been the admiration of two generations.

On the occasion of his eighty-fifth birthday he said: "After four score years the encroachments of time make themselves felt with rapidly increasing progress. The twelfth septennial period has always seemed to me one of the natural boundaries of life. One who has lived to complete his eighty-fourth year has had his full share even of an old man's allowance. Whatever is granted over that is a prodigal indulgence on the part of Nature. When one can no longer hear the lark, when he can no longer recognize the faces he passes in the street, when he has to watch his steps, when it becomes more and more diffi-

cult for him to recall names, he is reminded every moment that he must spare himself, for he is nearing the limit of his life."

Our bereavement is not merely national, but one that will be felt wherever the English language is spoken, for Holmes's genius was the common heritage of the English-speaking race. Walter Besant has voiced a general sentiment in saying: "At this moment I can not think of him as a writer to be classed or placed. I can only think of him as the man we all loved." *Frater, are atque tale!*

MINOR PARAGRAPHS.

TULANE UNIVERSITY.

THE faculty of the Medical Department of Tulane University have elected Dr. Rudolph Matas, who has been demonstrator of anatomy in that institution since 1886, to fill the chair of surgery *vice* Dr. Albert B. Miles, deceased. Dr. Matas entered the university as a student in 1876, served two years as a resident student in Charity Hospital, and was graduated in 1880. During 1879 he was selected by the yellow fever commission of the National Board of Health as their clerk, and was engaged in investigating yellow fever in Havana. He was a medical inspector of the National Board of Health in 1881. He gradually gave increasing attention to surgery, and in 1886 was elected professor of clinical and operative surgery at the New Orleans Polyclinic. He was an associate editor of the *New Orleans Medical and Surgical Journal* for a number of years. He is to-day probably better known in the North than any other physician in New Orleans, his writings having displayed a thoroughness in research, a judicial deduction from facts, and an elegance in style that commended their author to the reader. He is now the president of the Louisiana State Medical Association. Professor Matas is of Spanish and French descent. He is a fluent linguist, French, Spanish, Italian, and English being equally familiar to his tongue. He is a man of magnetic personality, and his literary and artistic tastes have made him a clear, and elegant speaker. As an orator he has no superior in the South, and it is not too much to expect that the luster given to the chair of surgery in the university by the late Warren Stone will be surpassed by the staff finished work of the present incumbent.

ITEMS, ETC.

Infectious Diseases in New York.—We are published in the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the last week ending October 9, 1894:

DISEASES.	Week ending Oct. 9.		Week ending Oct. 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever...	41	14	33	1
S. acute fever...	2	0	0	0
Enterocolic dysentery...	1	0	0	0
Mumps...	41	0	17	0
Dys. throat...	2	0	0	0
Scarlet fever...	0	0	0	0
Typhus...	0	0	0	0

An Uncommon Source of Lead Poisoning.—A series of cases of lead poisoning in a family have been traced by Dr. H. Strauss of Geneva, Sw., to the material used in stopping the ear-stoppers in which five times for the head of the household was

ground. The stopping contained a very large quantity of sugar of lead. Dr. Strauss states that a more extensive epidemic of lead poisoning at Chartres about thirty years ago was also traced to the use of a stopping for millstones which contained a large quantity of lead.—*British Medical Journal*.

Changes of Address.—Dr. Calvin Thayer Adams, to No. 21 East Twenty-eighth Street; Dr. Frederick Castle, to No. 51 West Fifty-eighth Street.

Army Intelligence.—*Official List of Changes in the Stations and Dates of Officers serving in the Medical Department, United States Army, from September 30 to October 6, 1894:*

DAVIS, WILLIAM B., Captain and Assistant Surgeon, is granted leave of absence for two months and fifteen days, to take effect on being relieved from duty in the Department of Texas.

POLHEMUS, ADRIAN S., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of fourteen days.

GIBSON, JOSEPH R., Lieutenant Colonel and Deputy Surgeon General. The extension of leave of absence on a surgeon's certificate of disability is further extended to six months on account of sickness.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy, for the week ending September 29, 1894:*

BLACKWOOD, N. J., Passed Assistant Surgeon. Detached from Naval Hospital, Norfolk, and ordered to the U. S. Receiving-ship Independence.

PARKER, J. B., Surgeon. Detached from the U. S. Receiving-ship Independence and ordered home and to wait orders.

ATLEE, L. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Pinta, ordered home, and granted one month's leave.

WELLS, HOWARD, Surgeon. Detached from the U. S. Steamer Detroit and ordered to the U. S. Steamer Montgomery.

AMES, HOWARD E., Surgeon. Detached from the U. S. Steamer Montgomery and ordered to the U. S. Steamer Detroit.

WILSON, GEORGE B., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, and ordered to the U. S. Steamer Castine.

BROWNELL, C. D. W., Assistant Surgeon. Detached from the U. S. Receiving-ship Vermont and ordered to the Naval Proving Ground, Indian Head, Md.

STONE, J. H., Assistant Surgeon. Detached from Naval Proving Ground and ordered to the U. S. Steamer Vermont.

Society Meetings for the Coming Week:

Monday, October 15th. New York Academy of Medicine, 530 N. York St., 11th floor, 7th St. Entrance. 8 P. M. New York Medical Association, 11th floor, 7th St. Entrance. 8 P. M. New York Medical Society, 11th floor, 7th St. Entrance. 8 P. M.

Tuesday, October 16th. New York Academy of Medicine, 530 N. York St., 11th floor, 7th St. Entrance. 8 P. M. New York Medical Association, 11th floor, 7th St. Entrance. 8 P. M. New York Medical Society, 11th floor, 7th St. Entrance. 8 P. M.

Wednesday, October 17th. New York Academy of Medicine, 530 N. York St., 11th floor, 7th St. Entrance. 8 P. M. New York Medical Association, 11th floor, 7th St. Entrance. 8 P. M. New York Medical Society, 11th floor, 7th St. Entrance. 8 P. M.

Thursday, October 18th. New York Academy of Medicine, 530 N. York St., 11th floor, 7th St. Entrance. 8 P. M. New York Medical Association, 11th floor, 7th St. Entrance. 8 P. M. New York Medical Society, 11th floor, 7th St. Entrance. 8 P. M.

the use of proper food. Dr. Acker had stated that tuberculosis and rickets were associated conditions; but he had yet to see a tuberculous child become rickety, and he thought that if a child suffering from tuberculosis was subjected to the conditions favorable to the production of rickets, the child would die before the rickets was fully developed.

Dr. KOPLIK, of New York, speaking of the value of medication in the treatment of rickets, said that phosphorus, when given for this disease, should be administered in the nascent form, dissolved in sweet almond oil in a capsule rubbed up in a sufficient quantity of cod-liver oil. One one hundred and twentieth of a grain of phosphorus should be the daily dose, and it was important that it should be given along with cod-liver oil. He thought that if this method of treatment was conscientiously and persistently carried out, the result would be found to be quite encouraging.

Dr. ACKER said that he believed that if the negro was placed under proper hygienic surroundings the disease could be cured without the use of drugs. In the Children's Hospital in Washington they had found benefit from giving a phosphatic emulsion of cod-liver oil which consisted essentially of the yolk of egg combined with cod-liver oil, New England rum, and glycerin, with oil of bitter almonds and orange water as flavoring agents.

An Aid to the Sterilization of Milk in Artificial Infant Feeding.

Dr. A. SHIBERT, of New York, read a paper the object of which was to call attention to a method of cleansing milk before sterilization, to enable every one to remove the gross filth from the milk and thus diminish the number of bacteria very markedly before the process of sterilization was resorted to. The author said that he had made a number of experiments the result of which showed that seven eighths of the bacteria could be removed from a given bulk of milk by filtering the milk through absorbent cotton. Experiment had shown that this process of filtration did not affect in any way the amount of cream or the specific gravity of the milk or diminish the quantity of sugar. Dr. Otto Kiliani, of New York, had assisted him by making control bacteriological experiments. These experiments had shown beyond a doubt that by filtering the milk through a half-inch layer of compressed absorbent cotton the germinating capacity of the milk could be reduced considerably, and that this could be still further increased by filtering the milk through cotton which had previously been moistened. By this process Dr. Shibert had been able to reduce the bacteria to a twentieth of their original number. A quart of milk could be filtered in five to ten minutes, and the process was so simple that it could be carried out by any mother. The author had found that the milk was not injured, and all the sugar was retained. The process was in no way harmful in the matter of producing the cream, and the milk was found to be as good as the original milk.

Dr. SHIBERT said that the statement that milk was sterile when it came from the cow was not correct. He had found that the milk was not sterile when it came from the cow, and that it was not sterile when it came from the hands or from the air.

Dr. SHIBERT said that he believed that the statement that milk was sterile when it came from the cow was not correct. He had found that the milk was not sterile when it came from the cow, and that it was not sterile when it came from the hands or from the air.

Infantile Scoury, especially its Diagnosis. Dr. J. HENRY FERGUSON, of New York, read a paper in which he discussed the diagnosis of infantile scurvy. He said that the disease was not rare, and that it was often mistaken for other diseases. He said that the disease was characterized by a general condition of the body, and that it was often accompanied by a general condition of the body. He said that the disease was often accompanied by a general condition of the body, and that it was often accompanied by a general condition of the body.

scurvy: E. P., born January 9, 1892, had been very puny at birth, and had had very small and ill-developed bones. The mother had been under treatment for more than a year for pulmonary tuberculosis and had improved somewhat under change of climate. This child had given no evidence of phthisis. The attending physician had advised early weaning of the infant. The child had been kept at the breast for two weeks, and then had been partly nursed and partly fed on Mellin's food. Soon, however, it had been fed entirely on artificial food. It had not thrived well, and after consultation with a physician it had been decided to employ sterilized milk. The child had improved somewhat under this change of diet, but had not gained flesh and weight and had appeared to be hungry all the time. The sterilized milk had been continued until the child was six months old, when the Mellin's food had again been employed. In February, 1893, the mother had noticed that the child would shrink when put into its daily bath which she had formerly enjoyed. A few days later it had been noticed that the child did not like to have the left ankle joint moved. A swelling had appeared on the leg shortly after this and had increased rapidly in size. The gums had soon begun to smell offensively and assume a dark blue. The pain and swelling of the legs had continued to grow worse, and in May the gums had bled when touched. The child had been thought to have some joint disease, and the attending physician had diagnosed acute articular rheumatism and had employed treatment for this condition. When the speaker had first seen the patient in May, 1893, it had been in a deplorable condition. There had been a fusiform swelling of the left ankle and of the left thigh, and these swellings had been very painful; the temperature 103°, the pulse feeble and very rapid; the gums of a dusky, purple color; the tongue and cheeks ulcerated. The whole mouth had also been inflamed and had emitted a very fetid odor. The slightest touch had been sufficient to induce bleeding of the gums. There had been petechial spots over the back and limbs. The right eye had been closed by the large amount of echymosis present; the conjunctiva had been involved in this effusion, and the swelling had extended far down on the cheek. There had been considerable blood in the stools, but the child had not had diarrhea. There had been a condition of marked anemia present. It had been evident from this description that the prognosis was not very encouraging, but after treatment had been carried on six or seven weeks the child had recovered and had since been healthy. The first step in treatment had been to change the food to Pasteurized milk, and to give orange juice in drachm doses every two hours, along with a grain and a half of the citrate of iron and ammonium every four hours. Antiseptic and astringent mouth washes had also been employed. The first sign of improvement had been observed in the leg; then the mouth and gums had begun to improve, and the hemorrhagic spots had been the last to disappear.

The author said he believed that the condition of malnutrition present in scurvy could not but exert a special influence on the blood-vessels. The most important cases of scurvy on record in children had not shown evidence of rickets, although the disease was formerly diagnosticated as "acute rickets." He thought that it was altogether too sweeping to look upon all hemorrhagic diseases as examples of scurvy. It was also an error to suppose that scurvy was accompanied by breast red children. The only position where the diagnosis was based were the swelling and tenderness of the ends of the femur, the swelling and spongy condition of the gums, and the rapid and complete relief of the patient after the institution of treatment. Scurvy might be mistaken for acute rheumatism, but in scurvy the joints were white and tender instead of being painful as in

which he said that in the carrying out of the manual correction of such deformities it was necessary that the pressure should be made only momentarily, and that it should be directed intelligently. He had never seen sloughing occur as a result of pressure. Ordinarily straightening would occur before fracture, but sometimes there would be a "green-stick" fracture. There was but little pain connected with this method of treatment. He had often found that the straightening was more pleasantly and more efficiently accomplished by forcible means, even in children five or six years of age, than by the use of osteoclasis. Osteotomy he looked upon as the operation *par excellence* for the correction of rhabitic deformity. Suppuration had occasionally followed the performance of cuneiform osteotomy, but in other forms of osteotomy it had been the rarest of all accidents in his practice, primary union being the rule. He spoke of the importance of not using an Esmarch bandage, because when there was a free flow of blood there was less likelihood of an inflow of air, and consequently of the occurrence of sepsis. While it was true that a slight mortality still attended osteotomy, he felt that most of the statistics upon which opinions as to the mortality of osteotomy were based had been obtained some years ago, and consequently did not apply to the present time. He was very anxious to learn the statistics of the last few years, for he had personally observed no deaths and had heard of none among his medical friends. He did not believe that a bone could be fractured with an osteoclast until all the soft tissues had been compressed and lacerated down to the periosteum, and therefore he looked upon osteotomy as a better operation than osteoclasis.

Dr. WHEEL said that with ordinary care and proper treatment he thought either linear or cuneiform osteotomy was perfectly safe, and to his mind preferable to osteoclasis. He had entirely discarded drainage in his practice, and he would like to know whether Dr. Willard still continued to use it.

Dr. RYAN, of Cincinnati, said that the chief difference between osteoclasis and osteotomy seemed to be the difference between precision and uncertainty. He thought that cuneiform osteotomy had been generally abandoned, except for cases of anterior curvature of the tibia. If osteotomy was performed on these subjects before the age of four or five years, the deformity would in all probability recur.

Dr. A. J. GUNTER said that he had never resorted to osteoclasis, because he had always been impressed with its lack of precision. He then detailed his experience with a case of osteotomy in which, notwithstanding persistent effort, he had been unable to obtain proper union. He could not assign any cause for this accident.

Dr. COPE said that he had always made it a practice to send the patient home after osteotomy, and he had never seen a drop of pus after the cure.

Dr. BARNES, of Buffalo, said that he did not think the time of waiting for the soft parts to be osteoclast was well founded. One could either produce a "green-stick" fracture, with the osteoclast, and then not only reduce the deformity, but secure the bone's union from a partial lesion of the bone, or else, if the bone had not been completely fractured.

Dr. W. E. THURMOND, of New York, said that he had seen cases in which Dr. Gunter himself had produced a fracture of the soft parts by using the osteoclast. Applied to the fractured bone, the osteoclast would produce a fracture of the bone, and then not only reduce the deformity, but secure the bone's union from a partial lesion of the bone, or else, if the bone had not been completely fractured.

Dr. COOLIDGE said that Lorenz had effectually obviated this difficulty by pads of very thick rubber on his instrument.

Dr. BARTOW said that he had avoided producing such lacerations by simply applying a piece of moleskin plaster at a point where the pads or girdles of his Rizzoli instrument were to make pressure.

Dr. KETCH said that he did not think any one of these patients with rhabitis recovered without deformity, unless at least some simple manipulation had been carried out. He would like very much to hear from the others regarding the so-called "growing-out" theory.

Dr. RYAN replied by stating that he had had under observation a family of four boys, all of whom had marked rhabitic deformities, and all of whom had outgrown the deformities without the slightest use of any form of manipulation or manual correction.

Dr. WILLARD said that he did not often performed cuneiform osteotomy at the present time, but when he did so he left the wound open. He felt that when there was a very free effusion of blood the callus was likely to be deficient, and this might explain the cause of non-union in the case reported by Dr. Gillette. Bad results after osteotomy were often due to faulty application of dressings by inexperienced assistants. He thought that the most common mistake after osteotomy was in allowing the patients to go around without proper mechanical support. Some such form of support should be worn by the patient for at least a year after an osteotomy.

Relief of the Spondylitic Spine from the Concussion of Walking.—Dr. J. C. SHAWPS, of Brooklyn, read a paper thus entitled. He said that in order to reduce to a minimum the concussion of walking, he had been in the habit of placing thick rubber heels on the braces worn by his patients. He had adopted this practice for the past two years, using rubber heels half an inch thick. These should not be nailed on, but should be stitched to the shoe.

Elastic Traction in the Immediate Treatment of Club-foot.—Dr. BERNARD BARTOW then read a paper on this subject. In his method of applying elastic traction he followed very closely that described by Mr. Barwell. His object was to supplement tenotomy by grasping the anterior aspect of the foot and abducting and twisting it into its normal position. Over-correction was secured by elastic bands attached by adhesive plaster at the base of the little toe, and by means of a second plaster strap attached at the knee near the outer margin of the patella. The various element yielded particularly well under this method of treatment.

Dr. NEWTON M. SHAFER, of New York, said that he had found intermittent traction as a general procedure extremely valuable, and he had also noted in many cases with great satisfaction the beneficial influence which it exerted on the nutrition of the parts.

Phelps's Method for the Cure of Clubfoot in Adults.—Dr. W. E. WIER, of Cleveland, read a paper in which he reported three cases, the patients being respectively ten, nineteen, and twelve years old, in which he had performed Phelps's operation. He believed that tenotomy, the open incision, and the removal of a wedge from the tarsus, and sometimes also the removal of the astragalus, would result in securing a useful foot in almost every case. The skin of adults and some older children would not, however, stand a severe straining force without sloughing.

Dr. WIER then reported a case of double clubfoot and double clubhand, in which there had been an extreme degree of deformity. Continuing the discussion he said that in a girl of

Miscellany.

The Extraction of Teeth.—The *Annales de la podiatrique* for September publishes a report of a clinical lecture by M. Dutour, in which, after remarking that the extraction of teeth belonged to the operations of minor surgery, he said that the wound left after the extraction should be treated like others, by antiseptic means and with greater care if possible, because of the innumerable microbes living in the mouth. The teeth were very firmly implanted in the sockets of the maxillary arch, and the adhesion was very great between the alveolar cavity and the root of the tooth, so that it was sometimes difficult to extract a tooth even with a single root, although it might be moved by the finger. The teeth were firmly fixed in the mouth by the alveolo-dental periosteum, a sort of ligament which attached the root to the socket, and by the gum, which clasped and solidly closed around the neck of the tooth. These uniting tissues were very resistant, and they must be shattered in order to extract the tooth.

Under these conditions the instrument to be used should be able to grasp the largest possible surface of the tooth, and to overcome the majority of the obstacles opposed to its extraction, also to diminish the power of resistance by grasping the tooth as near the extremity of the root as was possible. The instrument that best fulfilled these conditions was the forceps, and it was generally adopted at the present time. It should be properly formed as to curvature and size, to the form even of the tooth. There were numerous varieties of the forceps, and they were all made on the same principle, differing only in the details of construction. In order to understand why this special form was given to the bits of each forceps, said M. Dutour, a few words on the anatomy of the roots of the teeth would be useful. Certain teeth, the incisors and the canine, had only one root. This root, nearly cylindrical in the incisors and in the upper and lower canines, on the contrary, was flat in the lower incisors. The roots of the bicusps were single with a deep groove, or forked at the top of the groove, or completely double. The roots of the lower bicusps were always round, and those of the upper ones flat. The large upper molars had three roots: two external or labial, the strongest of which was anterior or median, and one internal or palatine, which was stronger still than the others. But, while the roots of the first molars were very much separated, forming a tripod at the base, they tended to draw closer together in the second molars, and were often united in a bunch in the wisdom tooth. The large upper molar had not only two roots, one anterior and very strong, the other posterior. The root was, however, deeply grooved, and the two roots were flattened and depressed in the center. In the upper molars, the roots, which were very divergent in the first, closer in the second, and sometimes united in the third, were not more detached than their extremities, which were rounded and flattened. These considerations, said M. Dutour, must guide the operator in the selection of his instrument.

With regard to the extraction of the teeth, the first thing to be considered is the position of the instrument. The forceps must be placed so that the root of the tooth, and not the crown, without flattening the instrument, should be drawn out as straight as possible. In the root of the tooth, the forceps must be placed so that the root of the tooth, and not the crown, without flattening the instrument, should be drawn out as straight as possible. In the root of the tooth, the forceps must be placed so that the root of the tooth, and not the crown, without flattening the instrument, should be drawn out as straight as possible.

chances of fracture. Whatever adhesions still remained were in this way destroyed, and nothing remained but to extract the tooth, which should be effected without violence or haste; otherwise there was danger of striking and fracturing the other teeth.

When hæmorrhage was produced, the mouth must be washed, not only with aromatic water, but with an antiseptic solution of sodium borate, thymol, carbolic acid, or the like. Afterward the wound should be gently probed in order to see if there were any small pieces of bone left which might prevent cicatrization. For several days the mouth should be washed with one of the solutions mentioned, or with a one per-cent. solution of chloral, which had the double advantage of being antiseptic and quieting the pain, which was sometimes very sharp after the extraction of a tooth.

These, said M. Dutour, were the general principles which might be applied to the extraction of teeth.

Rickets as an Infectious Disease.—In the *Nouveau Montpellier médical* for September 14th M. P. Puech publishes an article in which he remarks that, in a recent pamphlet, M. Chaumier, of Tours, endeavored to prove that rachitis was a "specific disease produced by an unknown microbe."

In the first place, says M. Puech, it must be observed that the theories propounded up to the present time in regard to rachitis are hardly convincing. Parrot's syphilitic theory, established on anatomico-pathological resemblance, is not tenable. Malnutrition leads much more to atrepsia and to marasmus than to rachitis; moreover, the bones of children who succumb do not offer any characteristic lesions of the latter.

The theory which attributes rachitis to the dissolution of the calcareous salts of the bones by the lactic acid formed in the stomach in large quantities when diarrhoea and digestive troubles exist has never been proved; if it was true, all dyspeptics would become rachitic.

To attribute rachitis to a defect of assimilation of the phosphate of calcium, under the influence of digestive troubles, is to forget that there are rachitics who digest their food well and have always done so. Again, why do not all children with digestive troubles absorb phosphate of calcium equally well, since all are not similarly affected?

The nervous theory is no more acceptable. Certain troubles observed among rachitics are oftener manifestations of hysteria than of rachitis.

Like many infectious diseases, rachitis is a disease of regular stages; it runs through its three periods—the rise, the crisis, and the recovery—with so great a regularity that all treatments practiced up to the present day do not seem in any way to counteract it.

Rachitis is also a contagious disease. M. Chaumier had often seen all or nearly all the children in the same family attacked with the disease. In asylums and in places where a number of people live together one may nearly always find a large number of rachitics. One may expect, then, to see an epidemic condition arise. Baginsky, Henoch, Bonadel, and M. Chaumier himself have noted that in certain years the number of rachitics was larger. The observation of animals confirms the remarks made here in regard to human beings. During the course of the last year a true epidemic broke out among young pigs in a part of the department of the Indre-et-Loire. The histological examination of the bones of two pigs that had survived the attack had shown the existence of the characteristic changes of the disease. From all this, asks M. Puech, is it right to conclude that rachitis is "infectious, parasitic, a specific disease, the microbe of which produces only rachitis, as the microbe of measles produces only measles?"

In the meantime we must conclude with M. Fiedl. of Naples that, since we do not know the pathology of the fetus, one may as well hold the microbial theory as any of the others.

The Grain Weight.—The *American Journal of Pharmacy* for October publishes an interesting article by Mr. J. L. Lloyd on this subject. Concerning the origin of the grain weight, the author quotes from C. W. Pasley, *Measures, Weights, and Money*, 1834, as follows: "In the days of feudal ignorance the standard of English linear measure was referred to the average length of a barleycorn, and the standard of weight to the average weight of a dry grain of wheat from the middle of the ear." This, says the author, might lead us to infer that our present grain weight represented the weight of an average grain of wheat at the time when the standard was established. But careful weighing of good samples of wheat has convinced Mr. Lloyd that such an inference would be erroneous, and that modern grains of wheat do not average a grain in weight. It is exceptional for an abnormally large wheat grain to weigh a grain. After studying the subject further he arrived at the fact that, while the grain weight actually represented the weight of average grains of wheat about six hundred years ago, this standard had been changed two hundred years later. *Johnson's Universal Cyclopædia* gives the following summary of that fact in the definition of the word "grain": "Assemble of Henry III, in the year 1266, enacted that thirty-two grains of wheat from the middle of the ear, well dried, should weigh a pennyweight, of which twenty should go to the ounce; but finally in the twelfth year of Henry VII the pennyweight came to be divided into twenty-four grains."

Thus it is seen that thirty-two standard grains of wheat were used six hundred years ago to establish the pennyweight, which then became the unit of weight. This pennyweight about two hundred years afterward was divided into twenty-four parts; hence, one pennyweight, or twenty-four grains, should now balance thirty-two grains of wheat, if wheat still conforms in size and weight to the standard taken as an average of wheat in the fourteenth century. In order, then, to conform to the standard employed by the statute of Henry VII, one hundred grains of wheat should weigh only seventy-five grains.

We have thus a well-established standard concerning the weight of wheat six hundred years ago, and an average of the wheat at the present time. It is noted that time and cultivation have had an effect on the size of the grain. It is not enough, says Mr. Lloyd, for this purpose to take the product of a single State or country; a broad average would be made of the wheats of the world; moreover, the seed is affected by drought and climatic influences. The author has made a comparison of the different wheats from fifteen countries, and the specimens were taken from the granaries of the State of New York. The results are as follows: 1. The average weight of those sold in large amounts in the grain markets. One hundred grains of wheat measured from the granaries of the State of New York, when fully plump, measured but seventy-five grains in weight. The fact that the average of the wheat sold in large amounts is so much below the standard is due to the fact that the wheat sold in large amounts is not the heaviest wheat, but the heaviest wheat is sold in small amounts. 2. The general average of all the samples is below the standard grain weight, being 70.7 grains to the hundred. 3. With one exception (the heaviest of the New York samples) the wheat is heavier than the standard grain weight, which was 72 grains. 4. With one exception (the heaviest of the New York samples) the wheat is heavier than the standard grain weight, which was 72 grains. 5. In comparing a grain of wheat with a grain

of forty-two separate lots, each of one hundred grains, ten specimens of wheat from different countries, the general average in the weight of wheats from all these countries was found to be far below the given standard, being only 60.870 grains. However, says Mr. Lloyd, an average of the heaviest of the specimens, one from each country, came very close to that of the original standard, namely, 74.774 instead of 72 grains. This would seem to show that cultivation and climatic conditions, during a period of six hundred years, have exercised but little, if any, influence on the weight of selected wheat.

Non-puerperal Peritonitis during the Lying-in Period

At a recent meeting of the *Société de médecine*, of Nancy, a report of which appears in the *Revue médicale de Paris* for September 22d, M. Alphonse Herzogt presented the following communication: The patient was a woman who was about to be confined. She had entered the hospital because she had been suffering with an intense diarrhoea for about ten days. She stated that she had suffered from the same trouble in all her previous confinements. Her appearance indicated cachexia. Milk, salicylate of bismuth, benzonaphthol, opium, etc., were prescribed, and they brought a notable amelioration in her condition. On the 21st of February a girl was born weighing about seven pounds. On the third day the lochia had become fetid, notwithstanding the use of vaginal injections of potassium permanganate. Several intra-uterine injections had been given, which had brought away a certain quantity of altered blood that had remained in the uterine cavity, the size of which showed subinvolution. On the sixth day the uterus had risen to fourteen centimetres above the pubes. The stools had become more fetid and numerous, and the preceding treatment was again insisted upon; boric-acid injections had also been given. The lochia again became normal and the stools less abundant, and the temperature fell from 100.7° to 99.5°. On the eleventh day her condition had seemed relatively satisfactory, when the temperature again rose to 102.7°; the pulse became small and frequent, and the patient began to vomit. The abdomen had become distended, and, as the abdominal walls were very much emaciated, one could follow the course of the intestinal coils, which were considerably distended. It had been remarked that the patient's tongue remained moist, and she did not complain of headache or of any sharp pain on abdominal pressure. Applications of collodion were made to the abdominal walls, but the swelling had increased, and it was impossible to follow the course of the intestinal coils. Her condition became graver, and on the 10th of March she died from peritonitis.

At the autopsy, on opening the abdomen and the peritoneum, the exhalation of an extremely fetid gas and a sudden depression were observed. The peritoneum was congested, and the intestinal coils had been bound down by adhesions of recent origin. The uterus was in its place behind the pubes, and measured thirteen centimetres in length and ten in width; the thickness of the fundus of the organ was a centimetre and a half. On the fundus, and at the left side, the site of the placental insertion seemed well preserved, and no adhesions were seen. There was nothing in the uterine lymphatics or in the ovaries. The ovaries were perfectly healthy. The small intestine was normal; it had not been moved, and the mesentery of the ileum. The large intestine was normal, and the sigmoid flexure was normal. The stomach was normal, and the pylorus was normal. The liver was normal, and the gall bladder was normal. The pancreas was normal, and the spleen was normal. The lungs were normal, and the heart was normal. The kidneys were normal, and the bladder was normal. The uterus was healthy.

This woman, who had not shown any trace of periperal infection, had, then, succumbed to an ulcerative entero-colitis with perforation, which had led to a fatal peritonitis. M. Herrgott dwelt upon the errors of diagnosis which a physician might commit at the time when the history, given by the patient, had not been of a nature to permit him to suppose the existence of such grave and extensive lesions of the large intestine, and he pointed out with what facility, in similar cases, a morbid process of this nature might be confounded with real puerperal infection.

The Employment of Sponges in Surgery.—At a recent meeting of the *Académie de médecine*, a report of which appears in the *Journal des praticiens* for September 19th, M. Guermontpré, of Lille, read a paper on this subject. After having recalled the advantages and the inconveniences of the sponge from an operative point of view, the speaker related a series of experiments which he had instituted in order to investigate the necessary conditions for the absorption of sponge fragments left in the various tissues of the animal economy. The length of time necessary for this absorption among dogs and rabbits varied from fifteen days to a month, and a sponge of the size of an egg had disappeared at the end of five months. The sponge becomes changed in its structure, it loses its elasticity and color; it becomes granular and finally disappears entirely. Of all the tissues, the connective tissue presents the greatest absorbent faculty.

M. Bernard Paulet had made use of this knowledge by grafting small fragments of sponge on ulcers of the leg. In all cases the sponge had acted in the same way, the fragments becoming modified and adherent, and finally absorbed, while at the same time the sore had changed its aspect and had begun to granulate.

M. Guermontpré afterward cited two cases that had come under his observation in which extensive excavations of the tibia had been treated by grafting with fragments of sponge. In these two cases the osseous lesion, which was very extensive, had followed the elimination of a deposit. The first case was that of a boy, ten years old, in which the sore had been sown with small fragments of sponge. It had rapidly become modified, begun to granulate, and healed, while the sponge had disappeared. The second case was that of a young man, nineteen years old, who had shown symptoms of syphilis. There had been an enormous loss of osseous substance, which it had seemed almost hopeless to try to repair by the ordinary means. There had been, furthermore, a complete retraction of the extensor muscles of the feet. Half of the wound was sown with fragments of sponge, and the other half with small pieces. The bone had healed, and the lost portion of tibia had been completely restored. The part of the cavity which had been sown with the small fragments had healed more quickly than the other half. The speaker had also tried the use of sponges in certain fibrillated painful joints, but without much result. The sponges had not even become adherent. It was the same in wounds due to illustrated in the paper.

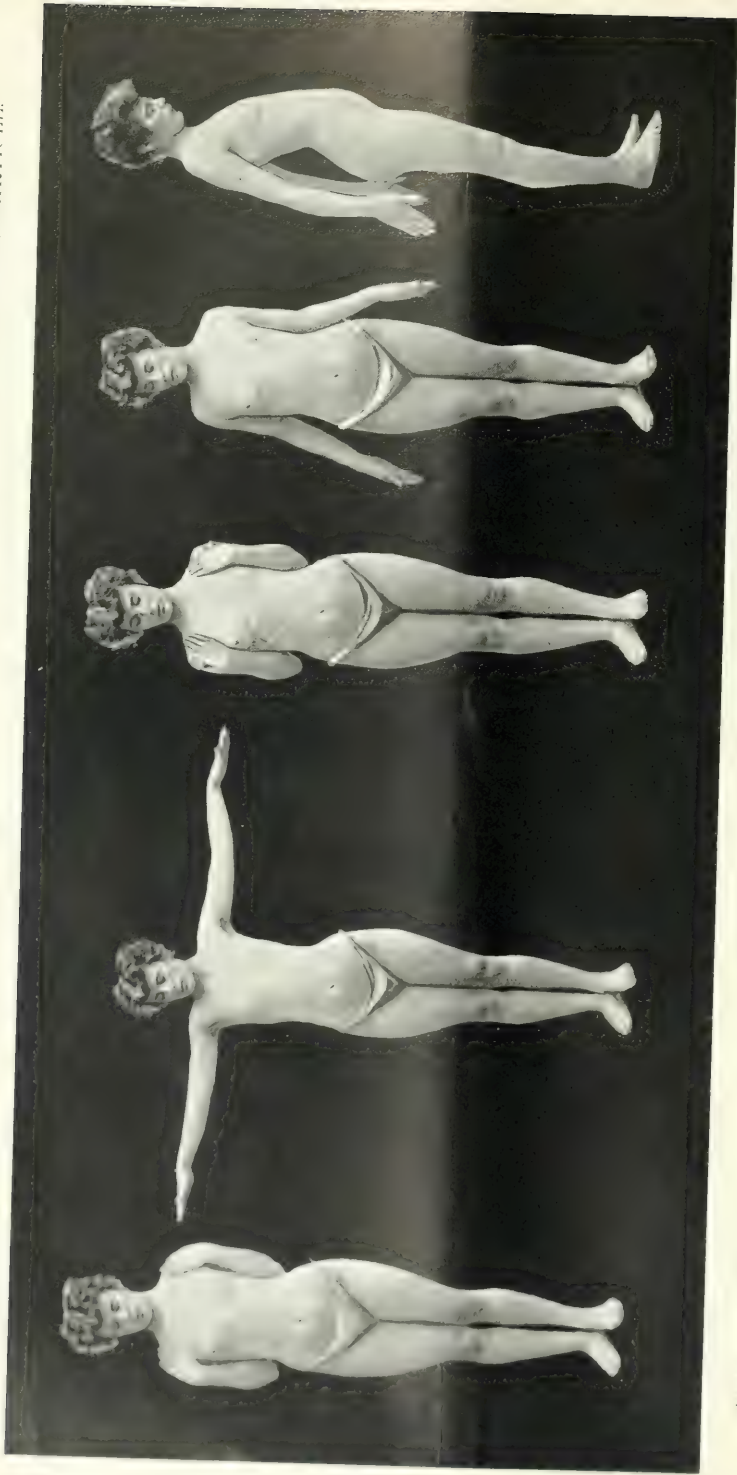
On the other hand, M. Lissac, of St. Louis, had obtained excellent results in extensive ulcers due to cancer. In these cases of removing the cancer, M. Lissac had presented the remarkable phenomenon of healthy granulation. M. Guermontpré concluded that the sponge did not act but served to remove that had been there, and to replace it by healthy granulation. He suggested the use of this sponge in the treatment of the cancer of the breast.

Partial Petrification of a Cystic Hygroma.—In the August number of the *Westchick* published in the *Journal des praticiens*, the account of a tumor presented by M. Guermontpré.

diately beneath the tuberosity of the ischium, to which it was adherent. Its existence had been known for twenty two years. It was situated behind the adductors and in front of the semimembranosus and semitendinosus muscles, and was covered by the gracilis. When it was first observed it was of the size of an egg, and had grown slowly but continuously until it measured about four inches in its vertical diameter and three inches and a half from side to side. Only in the latter stage of its growth had it been painful. At the time of the operation it was observed to be separated from the surrounding structures by a connective-tissue capsule. On section, it was found that the tumor was composed of a great number of lobes limited by connective tissue, the diameters of which varied from one centimetre and a half to four centimetres. The smallest lobes were partly solid and somewhat glutinous; the walls and the contents of the larger lobes were for the most part calcified. The central portion, which was not altered to so great a degree, was composed of viscid masses of a reddish-brown and semitransparent. Under the microscope it was seen that the small lobes consisted of a reticulated and filamentous connective tissue and of a clear intercellular substance which was not affected by hydrochloric or acetic acid. The wall was formed of fibrillated connective tissue. In the larger lobes the network was thicker and hyaline, and the intercellular substance was transformed in some places into a sort of colloid material, and in others it was coagulated, and the limiting fibrillated wall was sclerosed. These lobes, indeed, appeared petrified, either in their totality or simply in their walls and peripheral portions. The small lobes were supposed to belong to the early period of the growth of the tumor, and the larger ones to a later period, with different phases of the transition denoted by the other lobes. The causes of the uneven development of the tumor are attributed to the fact that the conditions of its nutritive supply varied in its different parts. The author remarks that hygromata having this appearance are very rare, and that the locality in which this one was found is well known not to be one of those in which these tumors are commonly met with.

Should the Frenum of the Tongue be Cut?—The *Revue internationale de médecine et de chirurgie pratiques* for September 10th contains a review of a work by M. Chervin. The author says that the habit of cutting the frenum of the tongue, which is so commonly practiced at present in Upper Brittany, Yonne, Poitou, etc., is based on the idea that the defects of pronunciation, especially stammering, are due to malformations of the tongue. For the past fifty years it has been practiced by the best surgeons of the time. It recalls the excision of the palate practiced in Persia by the barbers as a prophylactic measure in inflammation of the throat. Section of the frenum should be extremely limited in its application; when, for example, there exists an ankyloglossia, congenital or acquired, immobilizing the tongue more or less in a part of the mouth. This may be total or partial. When the frenum is excessively long, reaching sometimes to the point of the tongue and impeding its movements, simple section is not sufficient; excision must be resorted to. This operation should not be employed commonly, for, insignificant in itself, it sometimes offers serious dangers on account of the child's age.

It is wrong, says M. Chervin, to think it is always indispensable if the child nurses badly. A few exercises in suction on the finger may correct the defect without any operative intervention. In all cases, excision of the frenum is absolutely useless for correcting faults of pronunciation. They are amenable only to a methodical, natural, and rational education of the organs of speech, the duration of which need not exceed three weeks.



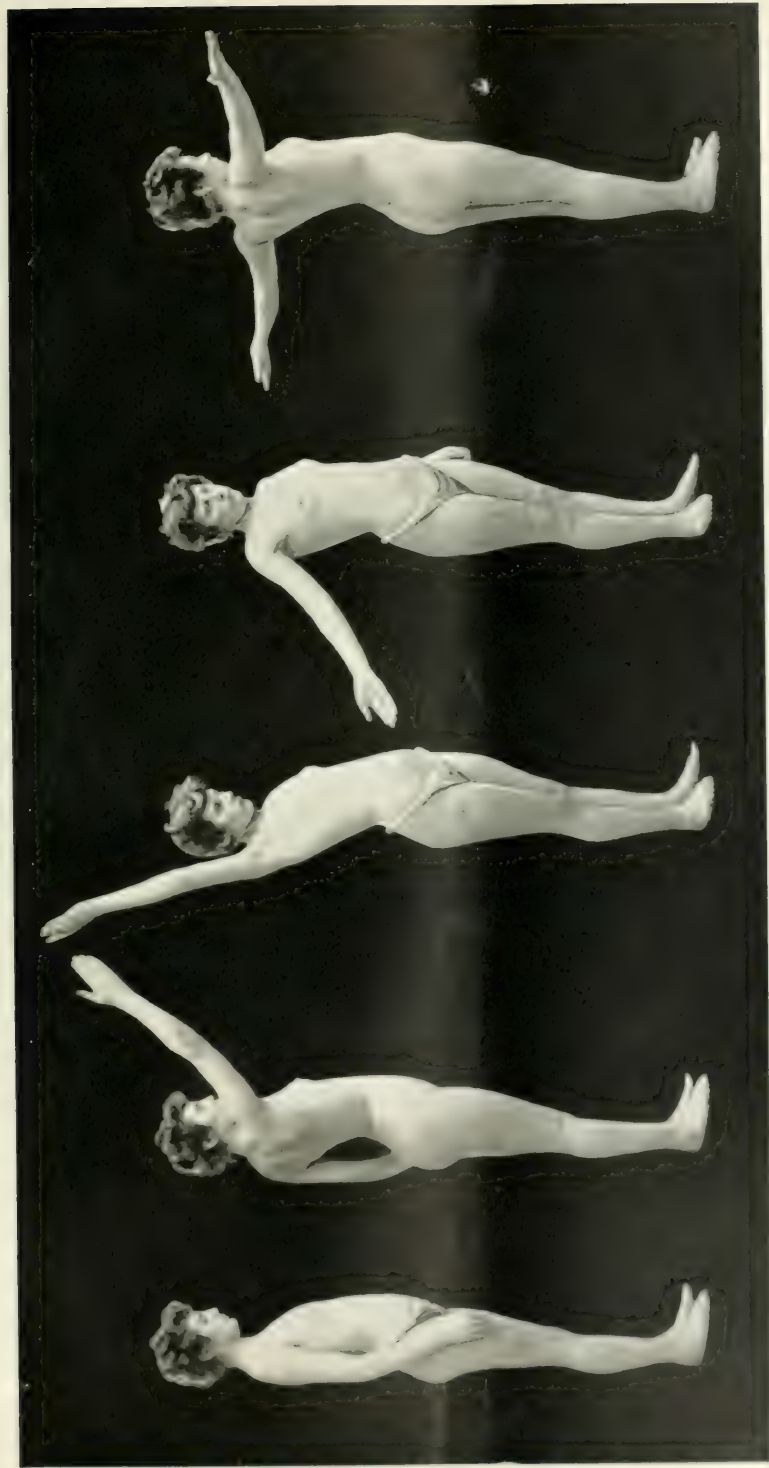
First movement.
Flex and rotate arms, fingers to
shoulder, elbows at side.

Second movement.
Extend arms to side, palms down.

Third movement.
Flex and rotate arms, fingers to
shoulder, elbows at side.

Fourth movement—front and side view.
Hands down and back, extend. Palms midway.

EXERCISE A.

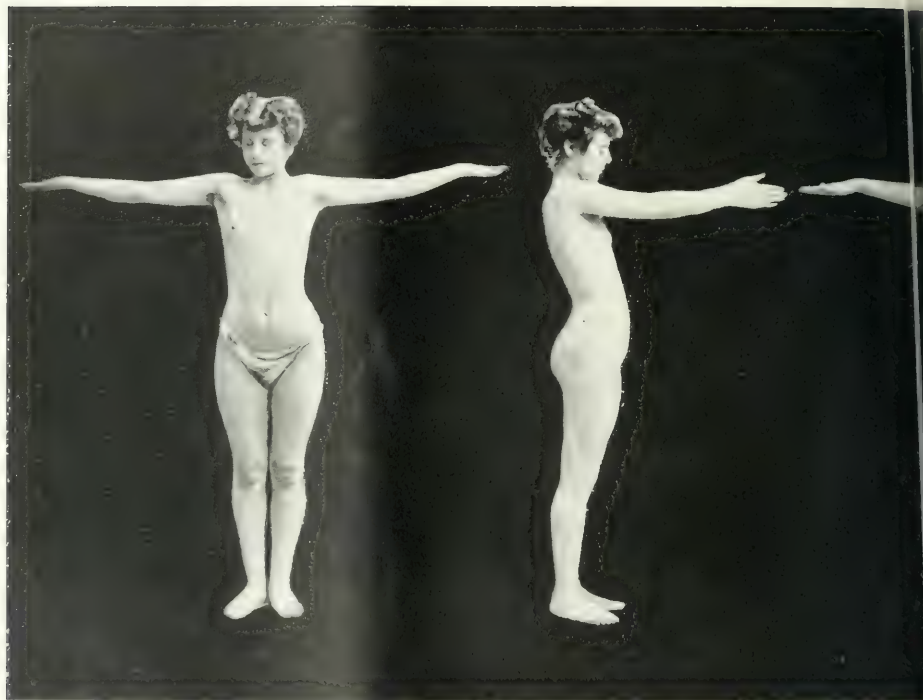


Arms extended to side and back, palms up.
Grind shoulder blades, moving hands in
small circles.

Left arm forward, reverse right arm two or slowly; exhale.

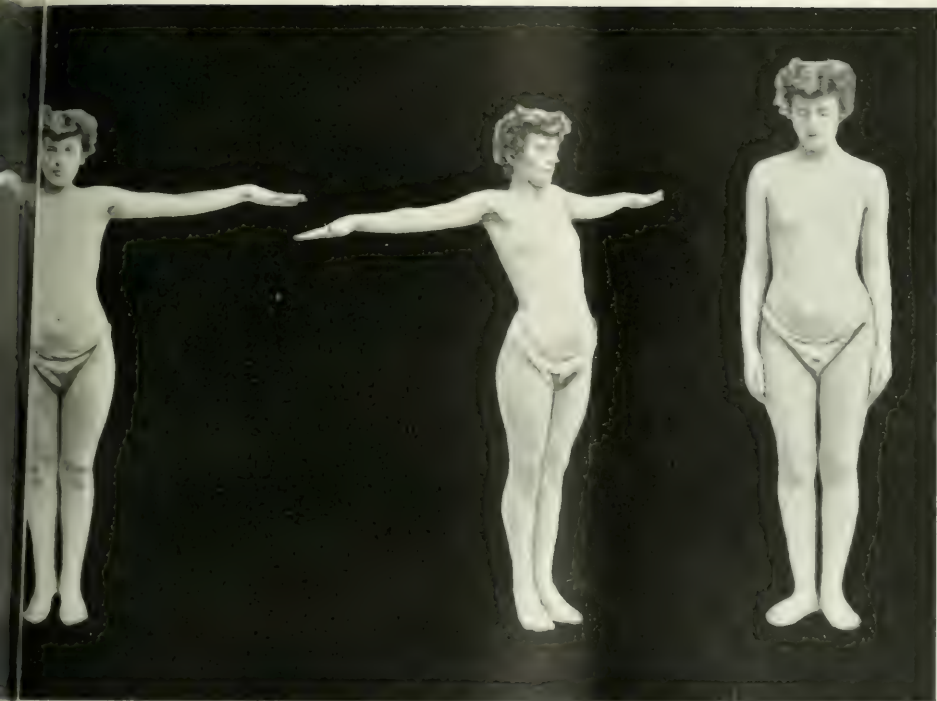
EXERCISE D

EXERCISE C.



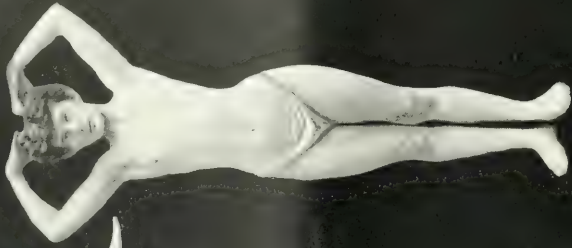
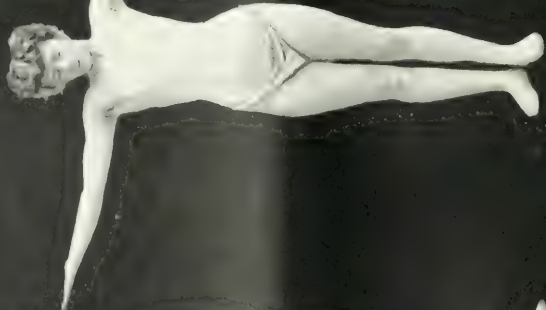
First movement.
Extend arms at side, palms up.

Second movement.
Palms together in front of body,
shoulder high.



Third movement—front and three quarters view.
 Rise on toes, inhale—extend arms to side and back as far as possible.

Fourth movement.
 Arms down, exhale, down on
 toes.



Head together, knees together, toes out, chest out,
and the arms hanging naturally.
Front and side view

First movement.
Extend arms at side, palms up.

Second movement.
Arms up, touching fingers
over head.

Third movement.
Clap hands over head,
full length up.

Fourth movement.
Arms down to side.

CORRECT STANDING POSITION.

EXERCISE E.

Original Communications.

THE METHODS AND VALUE OF
SUPERVISED EXERCISE IN THE PROPHYLAXIS
OF PULMONARY PHTHISIS.*

By GLENTWORTH R. BUTLER, A.M., M.D.,

BROOKLYN.

PHYSICIAN TO THE METROPOLITAN SENSORY HOSPITAL.

LECTURER ON PUBLIC HYGIENE, PHYSIOLOGY AND NURSING, PRATT INSTITUTE.
VICE-PRESIDENT OF THE AMERICAN DERMATOLOGICAL ASSOCIATION.

PULMONARY tuberculosis is essentially a disease of defective nutrition. Its immediate microbial factor is universally acknowledged, but underlying the bacillary growth is a certain vulnerability of the tissues. Pathogenic germs require definite conditions for their growth. If the necessary conditions are absent, growth and multiplication cease.

Without question, the tissues of the human body vary in their susceptibility to the advances of the tubercle bacillus. This susceptibility varies in different individuals, and in the same individual at different times. The proof is so obvious that it simply requires mention. The large majority of civilized individuals are exposed to the entrance of the bacilli into different parts of the body, but only the minority, sadly large, to be sure, surrender to the invasion. The fact that pulmonary tuberculosis occurs in a given organism, develops to a given point, and then under changed conditions and environment is arrested, constitutes proof positive of variance in the resisting power of the individual.

Improvement or arrest can not be credited to specific medication, for specific medication in phthisis is as yet a chimera. A consideration of the anatomical situation of the bacilli in this disease should at once dispel any hope of direct germicidal treatment. Imbedded as they are in thick mucus, fibrous tissue, and epithelial debris, and situated somewhere at the ends of an intricate system of branching tubes, which constantly grow smaller, the very mechanical difficulties are insuperable. This statement applies not only to undiluted solutions, but to vapors as well. The only way by which vapors enter the air cells is by diffusion, and the mere surface contact of a gas is not sufficient to act as a germicide. The well-known difficulty of sterilizing the external surface of the body in surgical practice bears upon this point. The hard working and prolonged soaking required is an interesting commentary on the futile attempts at local pulmonary disinfection which are still made.

The nature of nutrition—natural, lost, or supplemented—is not a less important factor. The tissues need for regeneration a flow of energy and a more frequent of the question. Prothrombin, proper rest, hypothyroidism, with its ability, under certain hypothyroidism and increased prothymic secretion, which whole of extreme importance, can not be induced to increased extent. Blackman's is a good example of this.

* Read at the annual meeting of the American Ophthalmological Association, Washington, May 20, 1894.

weighed or measured except as to their manifestations. Dynamic variations of cell power are not yet visible to the microscope, except in their grosser results. Granting that the essence of life power is unknown, it is nevertheless a convenience to use the terms mentioned.

A certain vulnerability, then, is antecedent to the development of pulmonary tuberculosis. On analysis, all measures directed toward its prevention or arrest act directly or indirectly toward improving the resisting power of the tissues. An exception must be made of those means which tend to lessen the chances of infection—viz., the destruction of bacilli laden sputa, disinfection of infected rooms, houses, or food, and the limitation of prolonged and close contact with the consumptive.

The measures employed for the prevention or arrest of phthisis may be classified as follows, omitting any form of quarantine or disinfection:

Climate, abode, and outdoor life.

Medication, general and local.

Personal hygiene and habits of life.

Exercise, general and special, with its corollary, rest.

Diet.

I have no intention of specifying the relative importance of these lines of treatment. It is not safe to neglect any one of them, so far as compatible with the circumstances and condition of the patient. Any device or measure that will strengthen and fortify the cells and tissues of the body should be carefully sought after and employed if practicable.

Realizing thoroughly the importance of broad treatment in this as in other diseases, I beg to call particular attention to one of these items—exercise.

I am very firmly convinced from fairly large personal observation that regulated exercise as a therapeutic resource is neglected by many physicians. This neglect does not arise from ignorance, because this subject has been fully and scientifically exploited in various periodical and systematic publications. It is more akin to the feeling with which one regards some of the English classics—as most worthy of regard, but not suited for practical everyday use.

In prescribing exercise the supreme importance of exact attention to detail should be emphasized. It is important in all things, but a matter of necessity in this. The use of a paper by Dr. Mitchell may give an idea in the mind. "Precision in the Treatment of Chronic Disease" is a most felicitous phrase, and beautifully descriptive of the mental attitude which should exist in the mind of the physician who is treating pulmonary tuberculosis, imminent or acquired.

There are five common points in which exercise is of a peculiar value:

1. The pulmonary mucus.

2. Increased metabolism.

The lowering of temperature is not done with absolute accuracy. The general condition of the patient is a factor in determining an individual case in its proper time.

Brother's speaking in the last meeting, Boston, 1894.

which the conditions presented give rise to a reasonable probability that phthisis will develop; the second class those in which the signs and symptoms are such as to show beyond peradventure that tuberculosis exists, but only to an extent that warrants one in terming it "incipient." The classification is a good working formula, if not scientifically correct.

The symptoms and signs, in greater or less number, and to a greater or less degree, presented by the pretubercular status are: Progressive loss of weight, languor, dyspnea, irregular or absent menstruation, anorexia or capricious appetite, insomnia, tubercular family history, neurasthenia, poor chest expansion, deformity of chest—viz., non physiological asymmetry or depressions—slight cough, afternoon temperature normal, or 99° F.; finally, absence of decisive pulmonary physical signs.

The symptoms and signs of the second class—incipient phthisis—are so familiar that it is unnecessary to recapitulate them. Hemoptysis is an event that is well-nigh pathognomonic. The physical signs may be so slight as to require the most careful and repeated examinations for their detection or so well marked that the diagnosis is at once indubitable. The history may include a previous pulmonary or pleuritic affection. The clinical picture should not exceed in its coloring the limitations understood by the term "incipient."

Exercise may be either general or local. The benefits of general exercise may be briefly mentioned: Increase in bulk and strength of muscles, stronger action of heart, improved circulation—arterial, venous, and lymphatic; increase of respiratory capacity, better action of skin, increased depurative functions, improved sleep, appetite, and digestion, and last, but by no means least, a decided bettering of the nervous system. The motor mechanisms of the body are not solely muscular, they are neuro-muscular. Regulated action of the muscles involves the correlative activity of the nerve centers from which they receive their stimuli. Training the nervous system by muscular exercise most certainly improves its functional capacity. When one recalls its varied, complex, and important activities it is readily seen that results of great value may ensue.

This paper is not intended to deal further with the large subject of general exercise, but to treat more particularly of local or special exercise, which in this connection consists of what is properly termed "pulmonary gymnastics."

The direct effect of pulmonary gymnastics is to strengthen the muscles of inspiration and expiration; to increase the capacity of the chest and thereby add materially to the respiratory capacity; to increase the ease and fullness of the respiratory action; and to promote the development of the chest and the general supply of oxygen to the tissues. According to the rule that full use of any organ leads to its functional, organic, and structural development, it is only a question of time before the chest will be able to perform its functions more efficiently. "Maximum vital capacity" is the term used to designate the full capacity of the respiratory system, and this may be brought to the highest attainable point by systematic and judicious exercise of the chest and respiratory organs.

The exercises which may be properly termed "pulmonary" are those which bring into special action the muscles of inspiration and expiration, ordinary and extraordinary, and also tend to place the head, neck, shoulders, and thorax into such positional relations that the expansion of the lungs is facilitated and increased. The various modes of pulmonary gymnastics may be classed under the following heads:

- Singing and elocution lessons and practice.*
- Use of wind instruments.
- Deep breathing, alone.
- Running, climbing, brisk walking, and sports which accelerate the breathing.
- Use of compressed or rarefied air, and their combinations.

- Military setting-up drill.
- Supervised exercises, especially adapted to improve respiratory capacity.

Lessons in singing and elocution involve deep inspiration and regulated expiration. So also does the use of wind instruments. To those who enjoy the practice of these arts there is opened a pleasing and efficacious method of increasing the respiratory capacity. These means are not employed to the extent that is desirable. Practice of this kind has the advantage of securing the willing and persevering adherence of the patient.

Deep breathing alone, repeated a number of times during the day, is very useful, but the direction so to do is usually honored in the breach rather than the observance.

Running, climbing, and fast walking indirectly increase the breathing power. All these, especially running and climbing, are adapted for comparatively few cases, because of the very decided effort and strain which they entail. Moreover, these efforts are apt to be ill-regulated and injudiciously severe. They should never be prescribed without the most minute directions as to time, length, and severity.

Aerotherapy, or the use of air, rarefied or compressed, in varying combinations, is a valuable resource. There is a great variety of apparatus, both simple and complicated, for use in this connection. Some of them aim at an artificial climatotherapy, with differing conditions of density and moisture. Others simply interpolate varying degrees of resistance during the acts of inspiration and expiration. Ordinary breathing tubes and wind instruments ought properly to be classed under this head. There has been much inconclusive writing on this subject. Many of the statements advanced by various observers have a largely speculative character, and do not appear to be based upon experimental findings. There is a lack of control experiments upon the comparative effects of breathing compressed and rarefied air, and forced breathing without apparatus. The relative permanency of these effects is also an open and very important question.

Certain portions of the military setting-up drill are useful in promoting proper carriage of the head, neck, and thorax. Some of the movements as usually practiced are

* See also the Dr. A. H. Starb's personal letters.

more violent than is desirable for persons not in full vigor of health.

Supervised Exercise.—Under this designation I refer to exercises of various kinds, graduated from time to time to suit the varying requirements of a given case, and practiced regularly under the guidance of a competent instructor, lay or medical. This method is by no means new, but has proved of sufficient value in my own work to deserve more than a passing notice. In most of the larger towns and cities it is quite possible, after a little search, to find a competent man or woman, graduated from a reputable school of physical culture, who can be trusted to do this line of gymnastic work. It should be understood that the entire course of treatment is carried on under the general direction of the physician.

The methods pursued are as follows:

Hygienic dress is insisted on, this generally being requisite in the case of female patients.

Regular daily work is required, with simple exercises to be taken at home.

Measurements and tracings of the thorax are made, and the vital capacity ascertained by the spirometer. These records, made at the beginning of treatment, are valuable for purposes of comparison with similar records made at subsequent periods.

After a careful study of the patient's general strength and pathological condition, a certain set of exercises is prescribed. The effort is to adjust the prescription exercise so as to fulfill the indications in the given case. These indications may be:

To correct deformities, depressions, and pathological asymmetries of the thorax.

To increase chest expansion and vital capacity.

To secure permanently deeper breathing by training the nervous system to habits of ampler rhythmic action.

All of these desirable results I have seen attained.

A certain amount of general exercise is usually given in order to secure the benefits acknowledged to result from it—viz., better appetite and digestion, sounder sleep, healthier condition of the skin and eliminative organs, and improved circulation. As this greater includes the less, a measurable degree of the benefit of general exercise is secured by preliminary exercise alone.

A large variety of exercise is available, according to the patient's ability and the results desired. Movements may be active, duplicated, expiratory.

An active movement is one accomplished by the patient without the aid of the operator.

A duplicated movement is one in which the patient, on the one hand, or the operator, on the other, or both, on the part of the patient, or resistance to the patient, on the part of the operator. The former is sometimes the muscle being strengthened while contraction; the latter is sometimes the muscle being shortened while contraction.

A passive movement is performed by the operator, with or without the aid of the patient.

It will readily be seen that exercises of this kind may be graded by very small steps from those which are effort-

less to those which require more than ordinary strength to execute. Although there is great variation in the outside appearance of many of the exercises they have in common certain underlying aims:

1. To elevate the shoulders.

2. To draw back the clavicles and scapulæ, and thus by traction on the pectorals to elevate the ribs and expand the thorax.

3. To strengthen the muscles of ordinary inspiration, the diaphragm and intercostals; also the muscles of forced inspiration, the scaleni, sterno-mastoids, trapezius, two serrati, and rhomboids.

4. To strengthen the muscles of forced expiration (ordinary expiration being passive and non-muscular), mainly the abdominal and quadrate muscles.

The third indication—to strengthen the muscles of inspiration—may be considered the most important. It is very desirable that the muscles of the neck, which have been mentioned above, should receive attention. If the muscles running down from the cervical spine to the upper ribs and shoulders are strong and of a good tonus, valuable aid is given to ordinary inspiration.

An example of a passive movement: Patient sitting, operator standing behind; the operator's hands are placed under the axillæ, patient leaning back; the shoulders are then drawn upward and backward, patient inhaling; then downward to the sides, patient exhaling.

An active movement: Patient, standing, extends arms above head, raises body on toes, inspiring at the same time; then down on heels, exhaling.

A duplicated movement: Patient sitting; operator, standing behind, grasps patient's hands, draws the arms vertically upward against patient's resistance; then patient draws arms down against operator's resistance. This is practically Sylvester's method of artificial respiration.

A good operator will begin moderately; will watch the patient carefully to avoid undue fatigue; will vary and add to the movements as strength is regained or acquired. It is a progressive method.

I beg to report in synopsis four illustrative cases out of a series in which supervised exercise was employed as one of the items of treatment:

Case I.—Patient, a young man, had been a soldier. Six months' attack of influenza, in January, 1893. (Chest back, tracing left.) After going back to his military duties, he had influenza. Transference occurred, tuberculous degeneration, and symptoms of phthisis, slow reduction of weight, weak condition of chest, and frequent coughing. After treatment, and exercise, the condition improved, and a few days later the patient was discharged from the hospital, and was able to resume his military duties.

Tracing.—Chest back, tracing, anterior view, (figure 1) and (figure 2) show the patient's condition before and after treatment. The patient's condition before treatment was such that he was unable to perform any of the exercises of the treatment, and was unable to perform any of the exercises of the treatment. After treatment, the patient's condition improved, and he was able to perform the exercises of the treatment.

In this case the apices were catarrhal and non-aerated. If tubercular disease was not present, it was at least imminent.

CASE II.—Also the daughter of a physician. Hacking cough for some weeks; evening temperature, 100 to 100.5. Slight expectoration; slight dullness both apices, with scanty crackles and moderately harsh breathing, especially on right side, after making due allowance for physiological differences. Expansion poor. Treatment * and subsequent history like Case I, but longer continued.

CASE III.—A woman, aged twenty-four years. Hæmoptysis small, but extending over several weeks, with previous history of gradual failure of health. Indubitable physical signs of localized apex tuberculosis. Poor expansion and vital capacity. Medicinal treatment and alimentation were rather unsatisfactory until supervised exercise† was added. She remained in good health for a year, when worry and care for a father who died of very chronic phthisis caused a relapse (probable reinfection). The way opened for her to go to California, where she now is, and doing well.

CASE IV.—A woman, aged twenty-five years. First seen four years ago with localized right apex tuberculosis of at least eight months' standing. Weight, one hundred and eight pounds. Afternoon temperature running 101° to 102°. Extreme weakness, dyspnoea, anorexia, and insomnia. So well marked was the disease and so unpromising her condition that a considerable sum was paid her by a benefit society, after a careful examination by three physicians, on the ground that her disease would prove inevitably fatal. In this opinion I fully concurred. She was first placed under the "rest cure"—rest, massage, electricity, and superalimentation. Six weeks of this brought her temperature down and her weight up. Careful management and graduated exercise under my own supervision caused a slow arrest of her disease, and to-day she weighs one hundred and forty-eight pounds, a gain of forty pounds, and the apex lesion, while perceivable, is quiescent.

In this case the exercises were under my personal direction, because at that time I was unacquainted with the great help to be afforded by a competent operator. The patient was unusually tractable and conscientious in carrying out detailed directions. I have found the "rest cure," with or without isolation, an extremely valuable resource in beginning the treatment of somewhat advanced cases.

A distinct advantage of supervised exercise is the moral effect on the patient by which the regular and persistent use of this means of treatment is assured. Without the stimulus of expected attendance on the operator, prescribed exercises are very apt to be neglected. Under ordinary circumstances most of us can not afford the time required to properly administer and supervise such exercises. Instruction should be definite, personal, and repeated. Herein lies another value of the trained operator.

The results of supervised pulmonary exercise, as before formulated, are substantially similar to those of mechanical apparatus. The comparative utility of each deserves a word of discussion. Judging from personal observation of cases submitted to both methods, I am convinced that the effects of personally strengthening the muscles of respiration and increasing the chest capacity are more marked

with supervised exercise than with aerotherapy. This statement applies only to the pretubercular and incipient stages. Permanence of effects is obviously extremely desirable. The superiority of one method over the other in this respect is founded upon the differing quantitative muscular efforts required. In pneumotherapy the following combinations may be attained by suitable mechanical devices:

Inspiration of—	Expiration into—	Inspiration is—	Expiration is—
Compressed air.	Compressed air.	Passive.	Active.
" "	Rarefied air.	"	Passive.
" "	Atmospheric pressure.	"	"
Rarefied air.	Compressed air.	Active, but expansion is hindered.	Active.
" "	Rarefied air.	Ditto.	Passive.
" "	Atmospheric pressure.	Ditto.	"
Air at atmospheric pressure.	Compressed air.	Active.	Active.
" Ditto.	Rarefied air.	"	Passive.
Finally, inspiration and expiration of air at atmospheric pressure, as in normal breathing and pulmonary gymnastics.	.....	"	"

It will be seen by examination of these combinations that—

(a) Inspiration of compressed air is always passive and does not strengthen the muscles of inspiration.

(b) Inspiration of rarefied air is active and strengthens the muscles of inspiration; but the negative pressure of the inhaled air diminishes and hinders chest expansion.

(c) Inspiration at atmospheric pressure is active, strengthens the muscles of inspiration, and there is no hindrance to expansion of chest.

(d) Expiration into compressed air is the only mode which strengthens the muscles of expiration. Practically this is equivalent to interpolating a greater or less resistance to expiration.

I claim, therefore, that voluntary active inspiration of air at ordinary pressure is the best method of securing permanent improvement in the respiratory capacity, because it is the most efficacious in strengthening the muscles of inspiration. This, in substance, is accomplished by supervised pulmonary exercise.

If it is desired to especially strengthen the muscles of expiration and to cause hyperdistention of the air cells, that end may be attained by the use of the resistance valves of S. Solis-Cohen or Dennison, or even the simple breathing tube. The latter is unscientific because there is no means of varying the resistance.

Facilitation of gaseous interchange and certain circulatory effects are claimed for the use of air at varying pressures. Probably these claims are well founded, although the evidence is largely theoretical. Nevertheless, the continuance of the pressure is comparatively so brief that these effects must be evanescent.

I do not wish to be understood as decriing mechanical aerotherapy. I simply desire to state that with the class of cases dealt with in this paper I have obtained distinctly

* *Medical Record*, N. Y. (1907).

† *Id.* (1908).

better and more permanent results with voluntary exercise.

The drawback of supervised exercise is obviously the difficulty of securing expert operators. As before stated, this difficulty does not apply to large cities. With reference to places where no operator resides, it may be affirmed that a physician who makes himself reasonably familiar with the subject can, by spending some time and trouble, train an available and intelligent person to do this work in a satisfactory manner. The practice of physical culture in the schools is fortunately spreading so rapidly that there are few towns of any size that do not contain some person, man or woman, who has given considerable attention to this subject. Such an one is usually willing to undertake medical gymnastics. Demand creates the supply.

In passing, it may be said that well planned supervised exercise is extremely useful in other than pulmonary conditions. I have seen excellent results in beginning lateral curvature, stooping shoulders, improper carriage of the body, awkwardness, psychical or congenital, habitual constipation, and disorders of digestion.

As a sample of exercises* which may be taken by the patient where supervision is not attainable, I submit these photographs. These exercises are intended for a person not much below the average strength, but the manner of performance may be modified to suit less vigorous individuals.

The photographs are made from a professional model. Each series represents an exercise; each figure, a phase or movement of the exercise. By noting the successive changes of position and contour from left to right, in connection with the text, a very imperfect idea of the exercise and its effects on the thorax and respiratory muscles may be gained. A personal trial of the movements will give a much more vivid realization of their physiological results.

To formulate conclusions:

1. The treatment of phthisis should be broadly comprehensive, but minute in detail.

2. Among many therapeutic agencies for imminent or incipient phthisis, one of the most useful is respiratory exercise.

3. Of all methods of obtaining increase of respiratory strength, capacity, and nutrition, supervised exercise secures the most permanent and lasting results.

LITERATURE.

LEITCH, G. A. *Memoirs on the Treatment of Pulmonary Phthisis* (Dissertation). *London Medical Journal*, November 1888 and December, 1888.

HARRIS, E. M. *A Treatise on Phthisis*, in Hare's *System of Practical Therapeutics*, vol. i, 1891.

HARRIS, E. M. *British Medical and Surgical Journal*, March 1, 1891.

LEITCH, G. A. *Annals of Physical Therapeutics*, in *the Compendium of Therapeutics* (Wideman, Part III, vol. ii, 1893).

LEITCH, G. A. *Medical Physiology*. Fourth (American) edition.

OSTROM, K. W. *Muscle and the Swedish Movements*. Second edition, 1891.

OTIS, E. A. *Pulmonary Tuberculosis*. *Boston Medical and Surgical Journal*, October 5 and 12, 1893.

SOLIS-COHEN, S. *Pneumato-therapy*. *Therapeutic Gazette*, January, 1887. Best summary of the subject, with many references.

SOLIS-COHEN, S. *Article Tuberculosis*, in Hare's *System of Practical Therapeutics*, vol. i, 1891.

DIPHThERIA AND THE SERUM THERAPY.

By AUSTIN O'MALLEY, M.D., Ph.D.,

MEILLER-VASSILAKI, INSPECTION OF THE DISTRICT OF ALEXANDRIA, ASSISTANT DIRECTOR OF HIGHER EDUCATION, AND DIRECTOR OF THE MEDICAL SCHOOL.

DIPHThERIA is now admitted to be a specific infectious disease caused by the Klebs-Loeffler bacillus. It begins with a local infection, usually upon a mucous membrane, and the bacilli for the most part remain in the infected focus, while the constitutional effects are caused by their products. Councilman (Pathology and Diagnosis of Diphtheria, *Ann. Jour. of the Med. Soc.*, November, 1890) and others think that the bacillus seldom if ever gets into the circulation. It is true that Frosch (*Zeitschr. f. Hygiene u. Infectiouskr.*, Bd. xiii) found a few bacilli in the blood, and Escherich (*Wiener med. Wochenschr.*, 1890, No. 49) obtained two pure cultures from the kidney, but usually they are absent. Perhaps Jemma's researches may yet clear up this point. He has been experimenting lately in the direction first pointed out by von Fodor in 1887, and he says that normal serum kills the cholera and typhoid bacilli, and that the serum in fever (39°-40° C.) not only kills but destroys these two bacilli in an hour and a half (*Archivio ital. di clinica medica*, 1893). There may be a similar action upon the Klebs-Loeffler bacillus.

The *Clostridium diphtheriae* has no characteristic appearance that it could be readily recognized with the microscope alone were it not that there exists a non-virulent non-infectious *Clostridium pseudodiphtheriae* which resembles it exactly. Roux and Yersin, Councilman, and others are of the opinion that the bacillus is a form of the Klebs-Loeffler bacillus. The latter is a straight or slightly curved, round-ended, non-motile rod. Irregularity in position in the field and frequency of shape are characteristic. We see bacilli that have one end swollen and the other end tapering, that fall across, cross-like and diamond-like shapes, solitary and found among the regular forms. These are dark and light spots in the field when the bacilli are stained but it has not been so. It is stained very well and rapidly with Loebler's alkaline methylene blue solution. The bacillus culture is a mixture of red, part of a solution made up of pyridine and quinine, 20 parts of each solution, alcohol 1 part and water 100 parts, with 1 part of each fluid added. This mixture placed in a shallow pan, in a shallow tray, taking care to keep it level and smoothed at the same time, by leaving it to rest, forms a transparent film. It is a white mixture. The transparent fluid is in and in the solution. The transparent fluid is in and in the solution. The transparent fluid is in and in the solution.

* A. M. O'MALLEY, M.D., Ph.D., is a member of the American Medical Association, and is a member of the American Medical Association, and is a member of the American Medical Association.

it is not necessary, and steam sterilization is not satisfactory. It seems probable that the *Bacillus pseudo-diphtheriticus* is present in throat affections much oftener than is commonly supposed. Recently two inoculated serum tubes were sent in to me on the same day by a physician from patients that had pharyngitis with no membrane or any constitutional symptoms of diphtheria. The bacillus was present in each case, but it had no effect upon guinea-pigs inoculated with it. Secondary cultures clearly showed this same bacillus, still non-pathogenic, in one case eleven days and in the other twelve days after the first culture.

There have been many articles recently published upon the non-identity of membranous croup and diphtheria, as if the question were not settled long ago; but not enough stress is laid upon the fact that a bacteriological differential diagnosis is the only possible diagnosis. No man can diagnose diphtheria by merely inspecting a membrane. We should urge our boards of health to supply the media for this diagnosis as is done in New York, New Orleans, and in other cities. The apparatus is not at all costly. A cover-glass specimen made directly from the membrane is unsatisfactory and not reliable. The bacillus may be present, but it is easily missed; even if it is found we must often inoculate animals to be sure we are not dealing with the *Bacillus pseudo-diphtheriticus*. It is not enough for diagnosis that the disease is mild in a patient, because some children resist unusually well, and a seemingly slight attack may be caused by very virulent bacilli. The New York method is simple and very practical. They use boxes holding two small test-tubes separated by a wooden partition. One of these tubes contains sterile serum bouillon, the other a metal rod carrying a sterile cotton swab held in place by a cotton stopper. These boxes, with directions for use printed thereon, are left at stations (drug stores) throughout the city and renewed at fixed intervals. A physician having a case of suspected diphtheria gets one of the boxes, makes an inoculation, sends the box to the central station, and the next morning the diagnosis is sent to him by telephone. The advantages of this method are evident. Isolation, prophylaxis, placarding of the house, anxiety of parents, intelligent treatment, subsequent disinfection, a statistical knowledge of the number of cases of real diphtheria, of membranous croup, and of similar diseases, and various other important considerations all depend upon the bacteriological diagnosis. We should ask physicians and homœopathic practitioners to send in inoculated tubes from every form of exudative throat affection they meet with. Then our statistics would be of some value.

Within about twenty hours after a guinea-pig is inoculated by the Koser-Loeffler method there is a soft œdema noticeable at the point of infection. The next day there is dyspnea, and the animal can not stand up when held upon its hind legs. Within a period of ten to twelve hours, the animal usually dies. The animal is usually found dead in the morning, and the cause of death is usually found to be asphyxia.

In diphtheria the toxin is found in the membrane and in the serum and the tissues of the throat.

for weeks after all symptoms of the disease have passed away from the patient. They get upon cups, glasses, the hands; upon beds, the floor, the clothing and instruments of physicians, and upon the walls of the house. Professor Flügge (*Zeitschr. f. Hygiene u. Infectiouskrankh.*, Bd. xvii) says that if they are dried and covered over from light and air by saprophytes, they live from seven to nine months and probably longer. He thinks that although they may remain alive, they do not grow in earth, water, or on house walls, but that they may multiply imperfectly in milk, upon meat, and in other places where they obtain nourishment. A somewhat low temperature, moist air, and darkness favor growth. In summer they are easily dried out, and they are more active in houses during the winter months than in summer. Welch (*Medical News*, May 16, 1891) told us all these facts years ago. Cases of diphtheria are not so frequent during July and August, and this intermission may be caused in part by the condition of school vacation. In two cases where I took cultures from near the tip of the tongue of children dead with diphtheria the growth was as plentiful as if the culture had been taken from the membrane. This suggests local treatment for the entire mouth, not merely for the membrane.

Sidney Martin, in a paper on the Chemical Pathology of Diphtheria (*Report of the Local Government Board*, London, 1891-'92, vol. xxi), describes how he isolated the poison of the bacillus, but he arrives at conclusions which other bacteriologists will probably not fully admit. He extracted by alcohol from the tissues of patients dead with diphtheria a light yellowish-brown powder soluble in water, and consisting almost solely of deuto-albumose and a small quantity of proto-albumose. There was no peptone present. It gave all the ordinary reactions of proteids, and was completely precipitated from solution by saturation with ammonium sulphate. There was no organic base or alkaloid found. His study of the parenchymatous degeneration of the peripheral nerves is valuable, and it confirms the observations of Déjérine and Meyer. From the membrane Martin got a proteid, much hetero-albumose, and some proto-albumose and deuto-albumose. These last three substances indicate a process of digestion. The membrane poison, moreover, is stronger than that extracted from the tissues. He maintains that the *Bacillus diphtheriæ* liberates a proteolytic enzyme which forms albumose and an organic acid in the body, and that these digested products are the agents which cause fever, paralysis, and death. It is almost morally certain that he had associated bacteria in the membranes he worked upon. He does not allude to this matter, but their presence should throw some doubt upon his deductions.

The bacillus and its poison are very tenacious of life and virulence. Roux and Yersin say the dry extract will resist 100° C. longer than twenty minutes (quoted in the *Zeitsch. f. Hyg. u. Inf.*, Bd. xvi). The bacillus itself is destroyed by exposure for ten minutes to a temperature of 58° C. This consideration leads to the question of disinfection after the disease. If furniture or textile fabrics are to be removed for steam disinfection they should be carried in bags which have been soaked in one part acid

bichloride of mercury solution to three parts glycerin. The glycerin prevents the crystallization and consequent falling out of the bichloride. Nothing need be said about steam disinfection, but in cities which have no steam plant there often exists the utterly erroneous notion that the diphtheria bacillus may be killed by sulphur fumes. Sulphur fumes will kill moist diphtheria bacilli, but not the dry bacilli, especially when these are covered by a glaze of mucus or by saprophytes, unless the disinfection be carried on in a reverberatory chamber or by burning enough sulphur to destroy the fabrics. There is needed ten per cent. of sulphur dioxide in the air to kill the bacilli, and, although twice this amount may be liberated by burning the sulphur, only about six per cent. is available. All textile fabrics should be put into wooden wash tubs containing either an acid bichloride solution (two parts HCl, one part sublimate), 1 to 1,000 in strength (*i. e.*, a drachm to each gallon of water), or a three-per-cent. pure carbolic-acid solution (two drachms to the gallon). Soak the articles at least an hour in the disinfectant, rinse with clean water, and dry. Mattresses and pillows should be pulled apart, soaked, dried, and remade. If carpets and other fabrics have aniline colors in them the colors may "run," but that can not be helped. The room should not be swept, because this process will float the bacilli into the air, and they will settle down afterward unharmed. Cut fresh loaves of bread into halves and rub down the walls and even the ceilings to collect the free dust. Burn this bread. Then *stipple* the walls with a stiff brush wet with the acid bichloride solution, even though the paper be destroyed at times. Mere wetting the walls is not enough. The floor should be thoroughly scrubbed with soapsuds, and this wash water should be disinfected before it is thrown away. Afterward wet the floor thoroughly with the sublimate solution. If the convalescent child is permitted to wander about the rooms it may be necessary to disinfect the entire house.

The first sign of the "membrane" is redness; then comes a transparent jelly-like exudate which grows pale-lain-white and later snowy white, then creamy yellow, then gray, then brown, and it may get almost black. The membrane is somewhat tough, leathery, as the name diphtheria indicates. The formation of the membrane has been so frequently described, and so well, except when the hyaline formation is discussed, that nothing need be said here. When between the edge of the membrane and the untouched mucosa a red, angry line appears, this line is sometimes called a "reaction edge," and its presence is of good import. In its absence the neighboring mucosa is pale and the membrane will spread.

Particular attention should be paid to the formation of bacilli within and upon the membrane. It is almost the rule to find other bacteria mixed with the Klebs-Loeffer bacilli. The *Streptococcus pyogenes* occurs most frequently. But the *Staphylococcus aureus* is sometimes found in diphtheria. It has been suggested, I may say, to try to remove the typical bacillus by a preliminary treatment with a dilute iodine solution. I have practiced this. Then he used the Klebs-Loeffer bacillus for the rapid count, but used a negative result. Next he applied a dilute

ture of streptococci and the *Bacillus diphtheriae*, and thus excited a severe inflammation with sero-fibrinous exudate. Funck's recent experiments (*Zeitschr. f. Hyg. u. Inf.*, Bd. xvii) confirm Barbier's conclusions, yet Funck maintains that the influence of the streptococci is not so great as some authors assert it is.

When grave septic signs appear in diphtheria these are results of putrefactive, gangrenous processes in the buccal and nasal cavities, which in turn are caused by bacteria other than the *Bacillus diphtheriae*. Gangrenous stomatitis, characterized by destruction of the buccal mucosa, and fetor of the breath are complications of diphtheria and not direct effects of the disease itself. These conditions are oftenest met with in dirty, ill-conditioned children that have carious teeth or scabs in the nose and nasopharynx, and they must be combated with chlorate of potassium and with other means. When septicæmia supervenes we are as helpless as are the surgeons; more helpless, indeed, because in our internal-medicine clinics and private practice we are usually unclean. Until we acquire the surgeon's horror for pyogenic micro-organisms septicæmia will remain unchecked.

At present the method of treatment in diphtheria is local disinfection combined with efforts to combat constitutional intoxication. The employment of the Behring's immune serum therapy comes under the latter part of the method, and the use of Klebs's antidiphtherin, now under examination, resembles local disinfection. The multitude of drugs advocated shows very conclusively that we have no specific, and that much empiric groping is done. Williams (*Amer. Jour. of the Med. Sci.*, November, 1893) maintains that the highly praised sesquichloride of iron acts only by the contained acid, and that water holding the same quantity of hydrochloric acid is equally effective. In connection with this matter of iron he further remarks that Fleischl's hæmometer will often show one hundred per cent. hæmoglobin when the patient has a very anæmic appearance.

The membrane is not only upon the mucosa but in it, and the *Bacilli diphtherie* are mostly buried in the membrane. Various means have been tried to dissolve the membrane so that we may get at the bacillus. Concentrated lactic acid seems better for the purpose than the dilute acid or any other means. Of course, the membrane is touched with the acid, not rubbed. The experiments of Williams (*loc. cit.*) with a concentrated solution of hydrogen dioxide may prove very valuable. Osler (*Prac. of Med.*, 5. 1891) says that he has not seen especially good results from the use of mercury, even either as the bichloride or as calomel, but Widerhofer's method, by inunction as if for syphilis, often gives excellent effect. I have repeatedly had cases of diphtheria in which the membrane was so thick that the respiration had become so obstructed with mucus that artificial respiration had to be resorted to, and that the membrane could not be removed. It must be acknowledged, however, that the danger in these cases is not the hæmorrhage, which the finger pricks have caused, but the asphyxia which the mucus has accumulated. In general, for the treatment of the disease of the diphtheria membrane, the following is suggested:

mercury to two parts of the medium) with an equal quantity of vaseline. Our *unguentum hydrargyri* is, of course, stronger than this. To a child a year old he gives three inunctions, at intervals of a half hour in a forenoon, and he repeats the three during the afternoon, making six a day, until about fifteen inunctions in all are given. To a child two years of age eight inunctions a day can be given, up to twenty inunctions in all. The nurse may wear an old kid glove while rubbing in the mercury. I have seen salivation caused once by eight inunctions, but this happens very rarely; and it should be remarked that in cases where the children's faces are white and waxen the inunctions must be given cautiously.

Even if we had a specific for the local treatment, it could not be always practical. It is difficult to reach the throats of sick children, and if the membrane is in the trachea, as happens not infrequently, we can not reach it at all. This would be a great disadvantage in the use of Klebs's antidiphtherin if no other existed. Klebs (*Wiener med. Wochenschr.*, 1893, Nos. 25, 26, 27, and 28) worked upon the principle that any particular bacterium would grow on a culture medium only so long as the special food for that micro-organism existed there. This seems to be Pasteur's rejected "exhaustion theory." He professes to have isolated a substance from the *Bacillus diphtheriæ* which by local application will hasten the exhaustion of the special diphtheria food in a child's throat. Oscar Vulpus (*Deutsch. med. Woch.*, xx, 127) has written a very severe criticism of his method, and he shows that Professor Klebs's antidiphtherin is practically of little value. The method of preparing the antidiphtherin is indicated in the *Wiener medicinisch. Wochenschr.* (1893, No. 26), but the working formula is not given. The costly, really secret preparation is sold by Merck, of Darmstadt.

Behring, with his *Diphtherieserum*, or serum from animals artificially rendered proof against diphtheria, seems to have succeeded at last in getting a cure for diphtheria, but the associated bacteria yet kill the children despite his efforts. For theories concerning the action of the serum one may consult articles by H. Aronson, in the *Berlin klin. Wochenschr.* for April 9, 1894; by Buchner, in the *Münchener med. Wochenschr.*, 1893, Nos. 24 and 25; and in the *Berlin klin. Woch.*, 1894, No. 4, and one by Tizzoni in the *Klinische Wochenschr.* for Oct. 5 and November, 1893. The explanation of the action of this serum is still under dispute, but the result appears as if of worth.

Behring takes a culture of the diphtheria bacilli, and divides it into certain portions. One of these is left pure, another portion is attacked by a small quantity of iodine trichloride. A part of the weakest of these attenuated bacteria is put into the animal from which he intends to get the immunizing serum. After some days the injection is repeated with the same weak attenuation, and so on until the animal can bear with impunity an injection of a pure culture of the bacilli strong enough to kill a control animal in about thirty-six hours. He then takes blood from the immunized animal, and filtrates the corpuscles out, and uses the serum upon diphtheria patients by hypodermic injection. One supposition is concerning the action of this serum

is that an antitoxine has been formed therein from tissue-change products brought into existence by the stimulation of the diphtheria bacillus, which neutralizes the diphtheria poison. Buchner denies this antagonism. The method is, of course, only a modification of the tetanus therapy. Guinea-pigs and sheep were used at first, but now they inoculate she-goats, since P. Erlich discovered that the milk of immunized animals protected like the serum (*Deutsch. med. Woch.*, 1892, No. 18). It required much study to make out the dosage of the new medicament.

Behring (*Deutsch. med. Woch.*, 1890, No. 50) gives this method for immunizing a guinea-pig: He puts iodine trichloride, in the proportion of 1 to 500, into a culture of the diphtheria bacillus which is four weeks old, and he leaves this standing for sixteen hours. He then injects 2 c. c. of this attenuated mixture into the belly of a guinea-pig. After three weeks he injects 0.2 c. c. of a culture of the *Bacillus diphtheriæ* that has grown for four days in bouillon which has therein iodine trichloride in the proportion of 1 to 5,500. Finally, after fourteen days, he can inject pure cultures of the bacillus. The latest modification of this method is that of P. Erlich (*Deutsch. med. Woch.*, April 19, 1894), and this may be employed in experimentation where iodine trichloride is replaced by other attenuating substances. He uses old broth cultures of the bacillus, and his preservative is a half-per-cent. phenol solution. The lethal dose of this culture must be at least 0.3 to 1,000 grammes body weight. For guinea-pigs of from two hundred to three hundred grammes weight he takes 0.8 c. c. portions of the culture—i. e., about the tenfold multiple of the lethal dose for this weight—and puts into these portions graded quantities of the attenuating substance—e. g., 0.4, 0.3, 0.2 gramme. Then he takes a half of the most attenuated mixture, raises it to 4 c. c. with physiological sodium-chloride solution, and injects it into the guinea pig. If this mixture proves too strong, there will be infiltration at the place of injection on the next day. After a few days he employs a stronger mixture, and so on up to the pure culture. Behring, in his book on the blood-serum therapy, is very lucid in giving his working formula for getting immunizing serum from horses and sheep for the treatment of tetanus; but the methods for diphtheria are not quite so clear at present.

In articles upon the dosage of the serum they frequently use the expression "200 I. E." This is for two hundred *Immunitäts-Einheiten*. There are sixty of these immunity units in one cubic centimetre of the serum.

H. Kossel (Ueber d. Behandl. d. Diph. mit Diphtherieserum, *Zeitschrift f. Hygien u. Infectiönskr.*, Bd. xvii, 3 h.) reports two hundred and thirty-three cases treated with the immunizing serum. Of these patients, seventy-two had been tracheotomized. Seventy-seven per cent. in all were cured, and fifty-seven per cent. of the tracheotomized children. The older the child and the earlier in the disease the serum is used, the better the results. Of seventy-eight patients treated during the first two days of their illness, ninety-seven per cent. were saved. Of course, they used the serum only where they found the Klebs-Löffler bacillus. Children upon whom the serum was employed later in

gery? Therefore, why not treat pulmonary tuberculosis by a surgical, a local method? Let it be well understood that when I say surgical method I do not mean surgically, for the treatment of pulmonary tuberculosis is and always will remain reserved for internal therapeutics, and if the surgeon, according to his motto that nothing is holy or sacred to his knife, has of late attempted to treat phthisis pulmonalis surgically, it has been inexcusable, so much the more as the results have been not at all successful. I am just intimating the attempts and experiments practiced here and abroad for the purpose of surgically attacking lung cavities.

Up to the time of the discovery of Koch's tuberculin the physician was more or less dependent on the use of inhalations, the results of which, however, were unsatisfactory. The methods of inhalations, which now have almost grown out of use, were based on two different principles. Either gases were inhaled, and that was the more rational method—i. e., NO_2 , etc.—or medicated vapors of water, alcohol, benzoin, etc. The former method was in many instances followed by comparatively good results, inasmuch as by it the circulation, etc., were somewhat improved. But it *only apparently* was a local method, as the *locus affectus* was not reached by the gases, for the diseased parts of the lung, and with them the parts in their immediate neighborhood, take little or no part in the act of respiration.

Concerning the inhalations of medicated vapors—i. e., medicated steam—it is well known that they are extremely useful and indispensable in the treatment of the various diseases of the nose and throat, but that is their limit. It has been proved experimentally that all those fluids which served as vehicles for keeping the different medicinal agents that were to be inhaled in solution—i. e., water when used in form of steam—are condensed and precipitated as soon as they reach the upper air-passages, which continually, like all the air-passages, are saturated with moisture. By this means, therefore, we can not expect to reach and therapeutically affect the diseased parts of the lung.

In searching for a good and rational method I found a special therapy of insufflation which had been described and published about five years ago in the *New York Medical Journal* by Dr. Loebinger, a physician of this city. After having carefully read his article, in which the author reports such gratifying results, I made up my mind to give his method a trial. I may here anticipate that the results which I obtained were very satisfactory, I should even like to say brilliant. It really seems peculiar to me that such a good thing has not as yet attracted the attention of the medical fraternity, for with the exception of a few medical reviews and synopses—Hart's excellent *System of Therapeutics* also mentions it—I have failed to find anything about it in medical literature. The main cause for the author's publication having been overlooked probably was that they appeared at the exciting time when the medical world was caught in a really fearful manner by the *typhoid tuberculous Kochii*. After having had such excellent results with this method of treatment, which, by the way, is a very handy one for private practice, being especially adapted for office work, I feel it almost a credit to myself

to herewith bring it into publicity and thus save it from the oblivion into which it had fallen.

The treatment is free from any internal medication, and consists of an insufflation into the lungs of a peculiar powder mixture. Insufflations are extensively used for the treatment of diseases of the larynx, but applying them to the lungs for the treatment of pulmonary tuberculosis certainly is a new and novel method. At once there arise two questions which *a priori* have to be answered—namely (a), whether the insufflated powder really is capable of reaching the lung tissue, and (b) whether it does not irritate and thus act injuriously on the upper air-passages. Then there remains to be discussed whether and to what extent a healing effect is induced.

The first question is readily and affirmatively answered by the following facts: At almost every autopsy we can, in examining the lungs, detect that the inspired atmosphere has carried along with it, even into the deepest lung tissue, all kinds of dust with which it was impregnated, and that for this reason and from this fact the lungs of city people, who live in an atmosphere very rich in dust, show a characteristic appearance. Men who during their work are exposed to an extraordinary and particularly dusty atmosphere show in their lungs certain chronic changes which differ a great deal from the appearances of the lungs which were exposed to street dust, and they constitute a series of diseases known as dust-inhalation diseases. These, of course, are all vulgar facts known to every physician, but, inasmuch as I have repeatedly been asked by colleagues whether the insufflated powder reached the tissue of the lung into which it was directed, I may mention the following: Ever since Zenker's classical work in the German medical *Archiv*, xiii, it has been known as an indisputable fact that the lung pigments found in cases of anthracosis, siderosis, and chalicosis pulmonum do not, as was formerly believed, originate within the blood, but that the corpuscular elements serving as a foundation for these pigments are conveyed with the inspired air not only into the alveoli of the lungs, but even into the interstitial tissue and into the bronchial glands. This may serve as a hint pointing to the actual possibility of therapeutically affecting tubercular foci which are scattered about in different parts of the lung tissue even somewhat distant from the air-passages proper. With what other form of local therapy could one expect to reach the bronchial glands which, as has in particular been stated by Dr. Prudden, are the terminal point of tubercular disease?

A further point is that the changes brought about by the action of dust consist in chronic inflammation ending in either induration or gradual destruction and necrosis followed by cicatrization of the respective lung tissue. Is this not the aim we have in treating the destructions produced by the action of the tubercle bacillus?

Finally, many authors have observed that the majority of men exposed to the dust inhalation diseases are possessed of a certain immunity from pulmonary tuberculosis: *ad exemplum*, men employed in coal mines (Moll, Pick, Morgan) and especially those working in lime pits (Mouqont)—another point worthy of being remembered.

The former methods of insufflation were defective ones. It is not only the material composing the insufflation powder on which the treatment depends—the main thing lies in a proper means by which we can infallibly, with every application, reach the *locus affectus*, or at least approach it as closely as possible.

Erasmus Darwin, and later Trousseau and Mortell, employed special apparatuses for insufflations. The only really useful and rational device for this purpose, however, was obtained by Dr. Loebinger, whose method I shall now describe. In the first place, it is not sufficient to simply make a general diagnosis of pulmonary tuberculosis, as is so frequently done, but it is absolutely necessary to examine the lungs very carefully in order to locate the diseased foci as accurately as possible. A mere inspection will usually reveal the affected side—namely, the one which remains inactive and almost motionless, at least in part, during the act of respiration. This usually also is the side upon which the patients declare that they are unable to lie or rest. Should we now subject the patient, having him in a general upright position, to an insufflation, the insufflated powder, following the current of inspiration, would be carried into the sound lung. To avoid this the patient has to be placed in such a position that the upper half of the body leans over toward the sound side. If in this position the patient breathes, at the same time elevating the arm and shoulder of the affected side, the current of inspiration, and with it the insufflated powder safely, and with the exclusion of the compressed bronchial lumen of the sound side, is conveyed into the affected lung, which, under ordinary circumstances, takes no active part in respiration. Further modifications of the position of the patient depend upon whether the *locus affectus* to be treated is in the anterior or in the posterior aspect of the thorax, whether at the apex or at the base of the lung. Accordingly the affected side of the thorax is bent anteriorly, or posteriorly, or upward, and thus rendered accessible to the current of the insufflated powder. In order to open the glottis at a given moment the patient takes a somewhat rapid, deep, and sipping inspiration, to be followed by a slower and longer expiration. The tongue is drawn forward as in laryngoscopy. A more detailed description of the treatment is to be found in the original publications. The patient has to be treated to a certain extent before he can be properly treated, and this training depends upon the individual intelligence and docility of the patient. It is noticed that the face generally, the exposed layers of the face and head, a fact which is noticeable even after a short time of treatment by the increased redness of the respiratory apparatus. There are a number of patients in whom at the beginning no distinct improvement in having the insufflated powder properly pass the glottis and the larynx of the trachea. But I have as yet not noticed any insufflation of other than tuberculous foci. The powder remaining in the larynx or trachea causes the cough irritation in patients affected with tuberculosis of the larynx, instead of to be inhaled by it. The quantity of the powder to be used at the beginning usually ought to be reduced to a minimum. One can very easily fix and locate that part of the lung at which the insufflated

powder has arrived. Before I specify how it is proved that this really is so, I should like to talk about the *modus operandi* of the powder itself.

The powder as such only serves as a vehicle for the ethereal oils with which it is mixed. These are contained in it in a proportion of 1 to 10. Favored by the heat of the body, they evaporate within the lungs, and are then imbibed in full proportion from the neighboring branches of the respiratory tree. This momentum is the kernel of the treatment, which by the author is most happily termed *internal inhalation*. In this the method differs from other plans of insufflation.

The ethereal oils are very highly spoken of by all those authors who have experimented with them, in regard both to their germicidal and even to their specific antitubercular properties. I may simply mention the favorable results which Landerer obtained in using cinnamic acid in cases of articular tuberculosis, also the good effects of inhalations of oil of peppermint and menthol in tuberculosis of the larynx, etc., and their innocuousness. Besides this, they exercise a peculiar kind of irritation on living tissue, stimulating it to a reproductive action. They also have a physiological action and effect on the endings of the vagus in the lungs, inducing a strengthened beneficial respiration.

The powder itself acts antiseptically and favors the calcification of the cheesy and tubercular foci by means of insoluble calcium salts.

Now that, as a matter of fact, the insufflated powder has reached deeply into the lung is readily observed subjectively: In case the powder has failed to pass the larynx and trachea, the patients will inform us that they feel a mild scratching or burning sensation at those parts of the respiratory tract. On the other hand, when the insufflated powder has safely passed the glottis and trachea, the patient will at once point out to us the part of the thorax in which he feels the presence of the powder and ethereal oils; and in this case he notices nothing whatsoever in the larynx or trachea, while at the particular part in the lung he experiences a peculiar sensation, characterized at first as a burning sensation over a limited area, which somewhat later is followed by a strongly cooling feeling, gradually spreading over a larger surface within the thorax. The patients declare that they have an agreeably refreshing sensation within the lung for hours after the application of the powder. Objectively we are able by means of auscultation to demonstrate the presence of the powder, etc., in the different parts of the lung. Where, for example, before we found numerous and coarse râles, we now, immediately after the insufflation, notice peculiar dry and rattling sounds similar to those of glottitis croup. At times there follows an expiration of alveolar sounds. The transition into the sound of the inner surface is most easily noticed in cases of scirrhus which are in direct connection with the bronchovascular bundle. As in many other cases of fibrosis, at times in this case, there are certain cases especially favorable for treatment. The same must be said as those in which only one side is affected, and the two bronchi are affected showing rather numerous disseminated foci on both sides of the thorax. Finally, we have cases (in which the treatment

is contraindicated—namely, in patients who are continually bed-ridden; patients with rapid loss of strength, having a high temperature; patients who—that is, within the preceding four weeks—have had hæmoptysis. If we wish to obtain lasting results we must also exclude from the treatment patients who at the same time are suffering from complications, such as intestinal tuberculosis, renal affections, endocarditis, etc.

The duration of the treatment depends upon the severity of the case, the average being about three months. The first signs of improvement generally appear very rapidly. I may now be allowed to report a few of my cases:

Case 1. — Mr. S., German, thirty-two years of age, nurse by profession. Since three years, after an attack of influenza, patient presented symptoms of pulmonary disease — viz., repeated attacks of hæmoptysis, considerable and very distressing cough, loss of flesh and strength, etc. Following the advice of his physician, he accompanied another patient to the South, where, after having remained a few months, he improved somewhat. The severity of his annoying cough, however, remained the same. After this he again had several mild attacks of hæmoptysis, which at each time rendered him unfit for work for a few weeks. When I saw the patient for the first time his main symptom was a very severe and most distressing dry cough, which every morning was followed by a copious expectoration. During the three years of his illness he had undergone different methods of treatment, from which he had received no improvement whatsoever. He had also been treated with Koch's tuberculin with the following results: At first the cough considerably decreased in frequency and severity, but after a short time it reappeared. At the same time there now appeared signs of fever, from which before the patient had been entirely free. He then abandoned this plan of treatment. His condition remained unchanged for the next few months. The following were his symptoms when he presented himself to me: Severe cough, anorexia, marked anemia, general weakness, so that he was not able to work at all, etc. Physical examination revealed an affection of the right upper lobe. The percussion note over the affected side was dull above the clavicle, tympanitic below down as far as the third intercostal space, and also gave the signs of Wintnick's change of sound, indicating a cavity. Auscultation gave bronchial breathing above and

was much stronger and able to work; and the cough had entirely disappeared. He still, in the morning, expectorated a small quantity of watery sputum, which, however, was free from tubercle bacilli. The objective symptoms were the same as they had been a few weeks after the beginning of the treatment.

CASE II.—Mrs. S., thirty-six years of age, had been suffering from lung disease for two years. She had lost twenty pounds in weight; complained of general weakness, anorexia, dyspœa, etc. Her cough was so distressing and so annoying that her family were frequently robbed of their night's rest by it. She also had suffered from mild attacks of hæmoptysis, had morning and afternoon fever, night sweats, and pains in the chest. All treatment so far had failed to relieve her. Even the hypodermic treatment, according to the method of Shurley and Gibbs, had had no effect at all on her disease.

Status Præsens.—Patient well built and comparatively muscular. Physical signs. Both sides of the thorax affected, the right side below the clavicle showing a cavity; the left side giving dullness on percussion from the apex down to the second intercostal space, below which is normal pulmonary resonance, which rather exceeds the normal limits below (compensatory emphysema). The sputum contained tubercle bacilli. Patient now subjected to the local method of treatment. At first the right and later the left side treated. The duration of treatment was two months and a half. The following are the results: The cough entirely ceased after two weeks of treatment. Later, however, the patient had repeated attacks of cough of less severity, and each time as a result of catching cold (according to her own statement). No more night sweats; appetite improved; weight of body the same as before her illness; sputum free from tubercle bacilli. I saw her again nine months later, and found her condition excellent, the same as when she had been dismissed from the treatment. The only thing she complained of was that she had experienced a relapse of cough and pain in the chest, both of which, however, had again disappeared without medical interference.

CASE III.—Mr. S., forty-four years of age, had been ill for a year and a half, having suffered from bronchial and gastric catarrh before that time. He was a drinker. The first thing he noticed wrong with him, a year and a half ago, was a severe attack of hæmoptysis, to which he almost succumbed. The same thing happened several times more during the next half year, so that the patient was very low. After that, for the next year, he had no other attack.

Stationary Process.—More inspection shows a retraction of the size of the palm of a hand on the right side below the clavicle, this retraction deepening still more during each inspiration. Auscultation and percussion give the clear signs of a cavity of the size of a fist. On the left side there is emphysema. The cough is very severe and accompanied with profuse expectoration. The sputum contains pus cells, elastic fibers, and tubercle bacilli. He was subjected to the local treatment for six weeks, with the following results: Gain in weight, four pounds; appetite somewhat improved; can breathe and sleep much better; cough reduced to a minimum; sputum still contains tubercle bacilli and pus cells, but no elastic fibers. Auscultation: Clear vesicular breathing on the left side; no more mucous râles. On the right side, above the cavity, there now are dry, peculiarly rattling sounds, instead of ringing râles. The percussion note is the same as it was before the treatment—namely, metallic tympanitic resonance, etc. Apparently no change of the cavity, a nearly consolidated state etc. has taken place, and, inasmuch as the healing of so large a cavity can hardly be expected, I am contented with the amount of improvement which so far has taken place.

CASE IV.—Mr. B., thirty-nine years of age, had been em-

ployed in a lumber yard. During a year's illness he had lost twenty-five pounds in weight, and now was so weak that he could hardly walk. His cough was very severe. The sputum was raised with difficulty, so that the patient frequently, while making efforts to raise it, was seized with attacks of vomiting. He was unable to rest on the right side of his body.

Physical Examination.—Both sides affected. On the right side there is found an induration reaching down as far as the upper border of the fourth rib. The left side shows induration from the apex down to the second intercostal space. The sputum contains tubercle bacilli. Also in this case the patient, after a very short time of treatment (by means of the local method), was remarkably improved. Duration of treatment, ten weeks, with the following results: Twelve pounds' gain in weight; cough reduced to a minimum. He can now again lie and rest on his right side all night. The dullness on percussion is considerably lessened on both sides. Increase of expansion, four centimetres on the right and two centimetres on the left side. Sputum free from tubercle bacilli. Patient again able to work.

CASE V.—Mr. F., engineer, twenty-eight years of age, ill for one year, before which time he had suffered now and then from nasal and laryngeal catarrh. There had been rapid loss of flesh and strength. The chief symptoms were fever, night sweats, cough, etc.

Physical Examination.—Considerable destruction of the right lung; consolidation in the left upper lobe. Hypertrophy of the heart. Sputum viscid, expectorated with difficulty, contains tubercle bacilli. On examination of the larynx there is found a congestion of both arytenoid cartilages, but no tubercular ulcers.

Duration of treatment, two months, during which the patient slowly but continually improved. Disappearance of the dyspnea, fever, and night sweats. Cough considerably decreased. Expectoration at the beginning of the treatment increased, but later scanty. Physical examination now showed the following: On the right side, consolidation; on the left side, a clearing of the dullness. On both sides clear, partly vesicular, partly bronchial breathing, without rales. I saw the patient again eight months later, and found his general condition good. The cough, which never had entirely ceased, is still accompanied with expectoration, but the sputum is free from tubercle bacilli.

—END SIXTY-SECOND SERIES.

CREOSOTE

IN THE TREATMENT OF PULMONARY TUBERCULOSIS
AND SOME OTHER AFFECTIONS

FIFTY YEARS AGO.

By WILLIAM BODENHAMER, M.D., M.H.

(Continued from p. 487.)

The writer's early interest with regard to the therapeutic value of creosote in the treatment of pulmonary tuberculosis, which has become well known, was expressed in the following editorial fifty years ago in the treatment of mental tuberculosis, which is a primary disease of the central nervous system, and is characterized by other symptoms, as well as by a more insidious and more chronic course, than in the case of the primary disease of the lungs. In the case of the primary disease of the lungs, the writer has had abundant opportunity to observe the therapeutic value of creosote in the treatment of the disease, and has seen the results of its use in the treatment of the disease.

used in the employment of it as practiced by able and distinguished men, but will speak more fully of the particular, the unusual, and the successful method which he himself adopted in its administration at that early period. The recital of this, however, may not prove interesting to some, in this rapidly progressive and revolutionary age, who would prefer to look forward in anticipation of what was to come, rather than to look backward to what had taken place half a century ago; but to retrospect occasionally may prove beneficial, and certainly can harm no one.

It is well known that creosote is not now for the first time employed as a curative agent in the treatment of phthisis pulmonalis, for more than half a century ago it was occasionally used for that purpose with more or less success by eminent men in Germany, in France, and in England; but, like many other valuable remedies, it has had its ups and its downs in alternate succession, giving place sometimes to inferior or to noiseful and worse than worthless remedies. Since 1876, however, it has had a regular and a decidedly upward tendency, which it firmly maintains, as is evidenced by the numerous and the distinguished advocates now engaged in its employment in the treatment of tubercular phthisis, and also by the very great abundance of the literature now extant upon the subject.

From all that is now positively known of the therapeutic properties of creosote, it would not, in the opinion of the writer, be considered exaggeration to affirm that in this agent we possess, if not a specific, yet a highly valuable antiseptic—astringent, styptic, anæsthetic or analgesic, escharotic, vermicide—and in the opinion of some, a specific microbicide. We thus perceive how this valuable remedy may fulfill many and various indications in the treatment of diseases.

It may here be remarked that the creosote of the present day is not as pure as it formerly was, and contains more or less of carbolic acid; but the success in its use will always depend upon its absolute purity. The most reliable creosote is that which is obtained from beechwood. It may just here be pointed out that the creosote which is derived from the coal-tar, which is not so pure as the beechwood creosote.

The writer's interest was first called to the fact that creosote in 1844, in Louisville, Ky., by being repeatedly used by him in the treatment of pulmonary tuberculosis of Mr. Samuel Vanhook, a friend of his, and a member of the Louisville Medical Association, and that he had been informed through his confidants in Germany of all that was then known of the new agent.

The writer's interest in the treatment of the disease was first called to the fact that creosote in 1844, in Louisville, Ky., by being repeatedly used by him in the treatment of pulmonary tuberculosis of Mr. Samuel Vanhook, a friend of his, and a member of the Louisville Medical Association, and that he had been informed through his confidants in Germany of all that was then known of the new agent.

great repugnance of patients generally to take this remedy by mouth, on account of its pungent and disgusting taste and odor, is entirely obviated; for we should always consider that in the employment of any official remedy it is not only necessary and important to know in what case, in what dose, in what form, but also by what channel it should be administered. Indeed, we can not, therefore, too strongly urge upon the profession the great benefit to be derived from the injection of this remedy by the rectum or the colon, which in the hands of the writer has produced such unvarying good results, and to the use of which no valid objections can be successfully urged.

Now, since it is generally admitted that the stomach will not tolerate the creosote in sufficiently large doses to produce decided and satisfactory effects upon the disease, almost all conceivable channels, as substitutes, have been employed by able authorities since 1876, to introduce this remedy into the system otherwise than by the stomach, such as inhalation by the respiratory passages, by hypodermic injections, by intrapulmonary injections, by intratracheal injections, by rectal injections, by laryngeal applications, etc. But the very important question concerning the best channel or channels by which it should be introduced into the system in pulmonary tuberculosis remains as yet, so far as the knowledge of the writer extends, unanswered and undecided by the majority of these authorities. As regards the inhalation of the remedy, it is well known that this method has frequently been employed with but very partial success, and can not therefore be relied upon alone in tubercular phthisis, except in the incipient or very early stage of the disease. But might it not be employed with advantage as an adjuvant measure in the advanced stage of the disease if adopted conjointly with the administration of the same remedy, either *per os* or *per rectum*. The disease might thus be the more effectually reached by these two conjoint methods of administration.

But right in the midst of these several substitutes, as methods or channels of administering creosote, exclusive of the stomach, comes now the announcement that a complete substitute for the original creosote is found in the new form, *creosote carbonate*. This product is said to be prepared from the best beech-tar creosote, and contains over ninety per cent. of that article. It is further declared to be taken without the least repugnance, and agrees well with the most sensitive patients, the stomach never rebelling even when taken in large doses. It has been employed by two French physicians with marked success, who say that it may be taken in almost any dose by the most delicate patients, and is destined to replace the original creosote in the treatment of pulmonary tuberculosis. It is singular to be hoped that these statements may be verified.

But, as respects the writer himself, he has always been an advocate of rectal medication under certain conditions and circumstances, and has demonstrated many years ago that medicine properly prepared may be introduced into the rectum or into the colon with great ease, with entire safety, and with prompt and decided effect; that medication thus administered has the decided advantage of

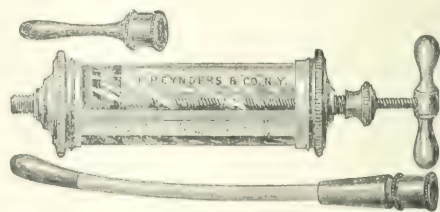
taneously into both the portal and the systemic circulation and of producing their immediate action upon the organs which they specifically affect; that through the rectal medium the most decided therapeutical impressions may be made upon the various important viscera of the chest, abdomen, and pelvis, as is plainly set forth in the writer's essay on Rectal Medication, published in 1878.

If creosote in proper strength could easily and without danger be directly applied to the diseased portions of the lungs in tubercular phthisis, and there produce its full local effect, as it does in the same disease in the rectum, we would have much stronger hopes of saving greatly increased numbers of such cases than by depending alone upon the remote or general effect of the remedy.

The writer here takes pleasure in recording the fact that the able French physician, M. Audeoud, in a very recent valuable monograph upon this subject, demonstrates most fully and conclusively that the rectum is the most eligible organ to which this remedy—creosote—should be addressed in the treatment of pulmonary tuberculosis (*Traitement de la tuberculose pulmonaire par la créosote administrée par voie rectale*).

It is worthy of observation here that as a general rule, according to the experience of the writer, the creosote even in much larger doses is better borne and more easily retained in the colon than in the rectum; consequently, should the latter organ, from idiosyncrasy or some unusual cause, not be in a condition to tolerate the creosote in sufficiently large quantities, it can be introduced through and beyond the rectum into the colon by means of a recto-colonic tube attached to a small syringe, or by the use of the writer's graduated three-ounce syringe, having a screw piston and a rubber tube ten inches long. The rectum or the colon will tolerate the injection much better, and it will not excite peristalsis when passed slowly from the syringe, as it does by this instrument, for the sudden distention of or the pressure on the parietes of the rectum or colon may, by the force of the common syringe, tend to induce the *nisus defecans*.

The following figure represents the syringe:



Before administering the remedy *per rectum* that organ, if filled with feces, should be emptied by an enema of warm water so as not to foul the medicine or cause it to be too soon rejected. The advice to empty the rectum is, however, superfluous with regard to those who declare and teach that the rectum is always empty except at the moment when the feces are rapidly passing through it, and that it is in no sense a temporary receptacle for fecal matter, etc. They thus degrade this richly endowed and equipped organ

by converting it into a mere faucet, or rapid transit, as it were, for the transmission or elimination of the residuum of digestion. After the injection of the remedy, should there be a strong or an almost irresistible desire to pass it, as is the case sometimes when there exists an exquisitely irritable state of the organ, a sponge or a fold of cloth dipped in hot water and firmly pressed up against the anus and held there for a few minutes will generally appease the desire and enable the patient to retain the injection.

The writer will now repeat some remarks which he made and published a number of years ago upon the nature, pathology, and diagnosis of tubercular disease of the rectum.

Rectal Tuberculosis.—It is said that tubercles in the lungs are essential to their existence in other organs—that is, that they are always developed in the lungs first. But this is not always so, for it is well known that they are often found in the different parts of the body when their existence could not be diagnosticated in the lungs. The writer has seen and treated a number of cases of rectal tuberculosis as a purely primary affection. In these instances the disease seemed to have been developed in the rectum first; as a general rule, however, whenever the affection is developed in any one organ or part, it is liable to invade all others; it doubtless, however, originates in the lungs in the majority of instances.

Rectal tuberculosis requires prompt and energetic treatment, or it will speedily result in ulceration, in abscess, and fistula, especially if in the inferior portion of the rectum. When it extends into the descending colon it is commonly called consumption of the bowels, and is often attended by many of the symptoms of tubercular phthisis, which it very much simulates, and in which it ultimately terminates, unless timely arrested. In this instance the disease originates in the rectum, but subsequently terminates in the lungs, the rectal disease having been the primary affection. On the contrary, however, it is well known that in protracted phthisis pulmonalis the rectum becomes greatly attenuated, all its coats being thinned and wasted, and sooner or later diarrhœa sets in, and patches of ulceration of the mucous membrane take place. These ulcers vary in form and size, being mostly small, circular depressions in the mucous membrane, the edges of which are generally rough or ragged. When these ulcers occur in the inferior portion of the rectum, and between the internal and external sphincters of the anus, they are almost certain to result in abscess and fistula. These ulcerations of the rectum are by no means uncommon in phthisical subjects, and are, with their concomitants, abscess and fistula, one of the complications of phthisis. Here the primary disease is phthisis, and the ulceration, the abscess, or the fistula, whichever occurs, is the effect or consequence of it. There are, however, other ulcerations of the rectum, almost identical in character with those already described, which are independent of phthisis, being the result of other chronic affections, as the ulcers which are known to occur in the last stages of gonorrhœa, leucorrhœa, dysentery, and diarrhœa, or in persons of a lax, lymphatic, or scrophulous constitution. Such ulcers, if not cured, are liable to result in rectal strictures, or in

anal abscess or fistula, and ultimately in phthisis in those predisposed to it.

Diagnosis.—Some of the diseases of the pelvis or anal region, especially those which appear in the form of chronic, cold, symptomatic, critical, or constitutional abscesses, as they are severally so designated by different authors, are sometimes attended, in weak and emaciated subjects, by hectic fever, night sweats, cough, expectoration, and great physical and mental depression. Such cases are sometimes diagnosticated as phthisis when at least no organic disease of the lungs really exists. In such the abscess or the fistula, if either exists, is let alone, and is allowed to reduce the vital powers of the patient by keeping up a copious and constant drain upon the vascular system and a continued irritation of the nervous system, respectively, so that in course of time the lungs also become seriously affected. This is no imaginary occurrence, as the writer could here report several such cases which came under his own observation.

Chronic Bronchitis.—Chronic bronchial catarrh sometimes simulates tuberculous phthisis so closely that it is well calculated to deceive, especially if attended, as it sometimes is, by persistent cough, expectoration, loss of strength and color, shortness of breath, and in some cases following influenza, hectic fever, night sweats, and diarrhœa. The writer has successfully treated a number of cases of anal abscess and of anal fistula which were associated with chronic bronchial catarrh, and which had been previously pronounced confirmed phthisis, and all treatment of the abscess or the fistula interdicted on penalty of speedy death from phthisis. A correct diagnosis in all such cases is of the highest importance, and should be sought for early before ulceration and other serious complications occur, so that the treatment may prevent these; but a minute and careful physical exploration of the chest, so far as pulmonary tuberculosis is concerned, will never fail to give the correct diagnosis and to disclose the true nature of the case. It is obvious, however, that the diagnosis of lung tuberculosis is much less difficult to obtain than that of rectal tuberculosis.

New Methods of Diagnostiating Tuberculosis.—The writer deems it important here to state that the old and ordinary method of obtaining the diagnosis of tubercular disease, which he had adopted and practiced many years ago, as is very briefly shown above, is now declared to be obsolete, and that it is completely substituted by other methods, pre eminently by that of Koch's bacillus; for it is conceded that the discovery of Koch is proved to every case of tubercular disease, and constitutes the pathognomonic evidence of that disease, regardless, however, of the disputed question, whether the bacillus is either the cause, the more attenuate, or the effect of the disease.

This new method of Koch is demonstrated by a histological examination. To establish or disprove the fact of the presence of the bacillus of Koch's bacillus in sputum or in intestinal tuberculosis, the excreta or the discharges from the morbid parts must be subjected to the same methods which are employed in the examination of the sputum in pulmonary tuberculosis. This method

R. Ol. creosoti.	
Bals. copaiba.	āā 3j;
Liq. opii sedativi.	
Pulv. acacia.	iv;
Aq. camphoræ.	3 viij.
Fiat mist.	

A tablespoonful of this mixture should be injected into the rectum night and morning.

The writer's first knowledge of the vermicide properties of creosote was obtained accidentally in a noted case which occurred in 1847 in Louisville, and which is reported in his treatise on anal fissure, published in 1868, p. 159. The patient had, with several other affections, chronic inflammation of the mucous membrane of the rectum, constituting a severe case of chronic catarrh of that organ. He was directed to inject two tablespoonfuls of the creosote mixture into the rectum night and morning. About two hours after the injection of the first dose the patient felt so strong a desire to stool that he could not resist it, and he passed into the chamber without effort three balls of what he thought were fecal matter, but, upon inspection, he found them composed entirely of mucus and small worms. He at once called the attention of the writer to the circumstance, and, upon examination, the patient's statement was verified. The worms were the pin or thread worms—*Oxyuris vermicularis* of Bremser, or the *Ascaris vermicularis*. These worms are generally found *en troupe* in the pouch of the rectum, where they find a nidus, and are so completely invested with mucus as not to be easily accessible by anthelmintics administered by mouth. In this instance the creosote in the mixture was doubtless the principal agent in effecting their death and complete dislodgment. When counted by the patient, he found they numbered three hundred and fifty-four. The continued excitement and irritation of the mucous membrane of the rectum produced by the long presence of these parasites were doubtless the primary cause of the catarrh, fissure, fistula, and spermatorrhœa, from all of which the patient suffered.

Some late authors say that these worms are indigenous to the cecum; but this is not the experience of the old authorities or that of the writer. They may migrate to that organ, as they doubtless do to different portions of the intestinal canal; but they are never found in such large numbers anywhere as in the pouch of the rectum. It can be admitted, however, that the enema would afford them a very snug harbor, from which they could not be easily reached by anthelmintic remedies administered either by mouth or by rectum; and in that locality, too, their long and continuous presence would be well calculated to cause oppression. The writer has also found them valuable as an emetic in chronic hemorrhoids and piles, placed as well as to cause and support healthy action, and as the most secure means. As a means of cure of hemorrhoids, it is used in the form of an enema, and is also used in the form of a gargarism, and is also used in the form of a gargarism.

The writer will now present, free of the party, formulae which he used in the administration of creosote and other purgatives and other remedies. The following formulae were found

beneficial in the diarrhœa attending pulmonary tuberculosis, a tablespoonful to be taken three times daily:

R. Ol. creosoti.	āā 3j;
Sp. ammoniæ aromat.	3j;
Aq. menth. piperitæ.	3 iv.
Fiat mist.	

This prescription has been found very useful in chronic affections of the kidneys and bladder. From one to two tablespoonfuls of the mixture to be taken by mouth three times daily:

R. Ol. creosoti.	āā 3 ss.
Acid. acetici.	
Sp. juniperi comp.	āā 3j;
Syr. simplicis.	
Aq. destillatæ.	3 xiv.
Fiat mist.	

The following prescription is very good in allaying irritability of the stomach in emesis, as in cholera morbus, etc. A tablespoonful to be taken frequently:

R. Ol. creosoti.	āā 3j;
Syr. simplicis.	3j;
Aq. menth. piperitæ.	3 v.
Fiat mist.	

This prescription is good in obstinate leucorrhœa. Inject two tablespoonfuls *per vaginam* twice daily:

R. Ol. creosoti.	āā 3j;
Liq. potassæ.	
Aq. camphoræ.	3 v.
Fiat mist.	

As an ointment the following is excellent in burns, fissures, abrasions, chilblains, etc.:

R. Ol. creosoti.	āā 3j;
Bismuthi subnit.	āā 3ij;
Glycerini.	
Ung. aqua rosæ.	3j;
Fiat unguentum.	

The following lotion is good in pruritus ani et vulvæ:

R. Ol. creosoti.	āā 3j;
Acid. oxalici.	3 ss.
Aq. camphoræ.	3 ij.
Fiat lotio.	

As a lotion this is a good one for chronic indolent ulcers:

R. Ol. creosoti.	āā 3j;
Aq. camphoræ.	3j;
Fiat lotio.	

The following prescription was found to be highly valuable as a gargle in mercurial pyalism, but mercurial salivary in form is not used in the form of a gargle.

R. Ol. creosoti.	āā 3j;
Aq. camphoræ.	3j;
Fiat gargarysmi.	

During the long and frequent employment of creosote in various chronic and acute diseases, both by mouth and by rectum, the writer has found no serious effects of poisoning, or of other affections. Some, with a view to ascertain the effects of creosote on the system, have used the same, particularly in the form of a gargle, and have found no serious effects.

diminishing the dose as the nature of the particular case required, and sometimes even withholding the remedy altogether for a time, to be again resumed.

With regard to the rectal tolerance of creosote, it has lately been asserted that if the rectum tolerates the remedy at first, it sooner or later rebels against it like the stomach. The reverse of this, however, has always been the experience of the writer; indeed, as a rule, he has found that the longer it was used the better, if possible, it was tolerated. This immunity from the irritating effects of the creosote upon the mucous membrane of the rectum may to a great extent be owing to the peculiar ingredients which the writer always incorporated with it, as seen in the first and second prescription presented above.

The writer will now conclude with the hope that creosote, which is at present placed in the first rank as an excellent and highly prized remedy in tuberculosis, will continue to maintain its high position and stand the test of time, never to be relegated, like so many valuable remedies heretofore have been, to that *limbus* from whose bourn so few ever return.

181 CANAL AVENUE.

TWO CASES OF

DESTRUCTION OF VISION BY FOREIGN BODIES;

RESTORATION OF SIGHT IN ONE OUT OF FOUR EYES
BY OPERATION.

By DAVID WEBSTER, M. D.,

PROFESSOR OF OPHTHALMOLOGY IN THE NEW YORK POLYTECHNIC
AND IN DARTMOUTH MEDICAL COLLEGE;
SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL.

THE two following cases are of extraordinary interest, inasmuch as the father lost the sight of both eyes from injury with bird shot, the gun having been fired by his son, while the same son lost the sight of one eye permanently and of the other temporarily by a cannon explosion less than a year later. The acuteness of vision restored to one of the son's injured eyes by the removal of the traumatic cataract is worthy of remark:

Case I. *Both Eyes of the Father Put Out by Bird Shot.*

James O. P., aged forty-eight years, of Tarrville, Conn., was generally shot by his son in both eyes, a No. 10 shot in each, on August 1, 1889. His son thus describes the catastrophe:

"We were hunting woodcock in the bushes. My father was about twenty yards from where I shot. I did not see him. The bird was flying. My gun was elevated from where I stood as much as fifty yards over his head. There were only two shots fired between us and he was hit."

When Mr. P. came to consult Dr. C. E. Agnew, on May 29, 1891, eight months after the accident, the condition of his eyes was as follows: "There had no perception of light in either eye by the usual test, but the patient used to count the sun and stars. The corneal reflex was well marked in each. There was total posterior opacification of both, and both retinas were blind and dead. A smallity at the bottom of each cornea showed where the shot had entered the eye. Dr. Agnew was of the opinion that an operation would restore sight, and offered to do so before leaving for his home."

On June 11, 1891, I was required by a Circular from the Committee on the subject of the restoration of vision, to examine the eyes of the patient, and the

man who did the shooting, was brought to Dr. Agnew's office at the same time with his father.

On the 4th of July following the accident to his father—i. e., July 4, 1870—he had both eyes injured, one lost, by a gunpowder explosion. He thus describes the accident: "I went up to the mountain to fire the cannon. It was a very large one. We put eleven pounds of powder in it, and drove turf in with a sledge hammer, and the second time the fuse that we set it off with turned over and struck in the vent hole, and it was loaded so—drove in so hard—that it did not go off. It all blew back out of the vent hole right to the left of my head. I was within two feet of the vent hole. My foot was on the cannon. If my head had been four inches to the left it would have been blown off. The powder did not burn that went into my face. I was covered from my waist up, and it burned my clothes off."

Upon examining him we found that he had *phthisis bulbi* of the left eye. In the right eye there was traumatic cataract. There were adhesions of the iris to the anterior capsule of the lens, and there were particles of powder and possibly of dirt in the substance of the lens. Still, he retained vision enough to enable him to get about alone. Dr. Agnew advised that the eyes be not operated upon unless the vision became worse.

June 6, 1878.—The patient counts fingers at four inches when they are moved before his eye. He can no longer see sufficiently well to go about alone.

10th.—I administered ether, and Dr. Agnew enucleated the left atrophied eyeball at the Manhattan Eye and Ear Hospital.

Several needle operations were done on the cataractous lens by Dr. Agnew at proper intervals of time, and the vision was considerably improved. He came to the hospital on July 17, 1885, with a dense membrane in his pupil and with vision only $\frac{1}{40}$ with the best glass. Dr. Agnew being absent, I performed a discission on the same day. The result was vision $\frac{1}{200}$ while the pupil was dilated with atropine; but it was evident that the clearest part of the pupil would be covered by iris when the effects of the mydriatic should have passed off.

On July 22d, five days after the discission, I made an incision with an iridectomy knife at the temporal side of the cornea, just over the border of the dilated pupil. I then passed in a small, sharp hook, and, engaging it in the membrane, withdrew the latter from the eye, leaving quite a large mass of opaque lens-matter in the supero-temporal portion of the anterior chamber in contact with the iris. I then dropped in atropine and bandaged the eye. There was very little immediate inflammatory reaction. Some days later the patient had considerable pain in the eye. Iced cloths, atropine, and eserine were applied locally; one or two hypodermic injections of morphine were administered.

August 8th.—The eye is no longer painful, but still somewhat red. Vision = $\frac{2}{200}$ with + $\frac{1}{4}$.

15th.—The redness has passed off. Vision = $\frac{2}{200}$ with a convex glass.

June 23, 1891.—Vision = $\frac{2}{200}$ with his glass. Vision = $\frac{7}{100}$ with + 10 D. S. \odot + 2.75 D. c. axis 50°. There is still, nine years after the last operation, a movable mass of organized lymph attached to the iris, supero-temporally, and waving about in the aqueous humor as he moves his eye.

The Sims Statue.—The unveiling of the statue of the late Dr. James Marion Sims will take place this (Saturday) afternoon, at three o'clock, in Bryant Park. All members of the medical profession are invited to be present. It is expected that short address will be given by Dr. George F. Shady, the chairman of the committee in charge of the undertaking, and others.

THE
NEW YORK MEDICAL JOURNAL.

A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 20, 1894.

ISOLATION HOSPITALS FOR INFECTIOUS DISEASES

This is the title of a very interesting and instructive pamphlet recently prepared by Dr. S. W. Abbott, secretary of the Massachusetts State Board of Health. Dr. Abbott opens with the remark that during the past two years there has been an increased demand from the authorities of cities and large towns, especially of manufacturing towns, for information on the subject of hospitals for infectious diseases, and this has induced him to make what he modestly calls a compilation. He lays it down that the essential difference between hospitals established for receiving patients attacked with infectious diseases and other hospitals consists in the fact that the general hospitals are maintained mainly for the purpose of affording care and treatment for the individual, while the infectious-disease hospitals, while they also afford this care and treatment, provide at the same time for the protection of the community at large, constituting one of the essential measures for preventing the spread of infectious diseases by furnishing the means of isolation in the first cases which appear in the community. The chief reasons for establishing these special hospitals in large cities are given as follows:

1. Isolation constitutes the first and essential principle in the preventive treatment of the majority of infectious diseases. The more nearly perfect the barrier between the sick and the well, the greater is the approach to certainty in staying the spread of infectious diseases. The increasing accumulation of population in the cities has a tendency to favor the spread of such diseases. To illustrate the effect which this crowding together of the population has upon the mortality from infectious diseases Dr. Abbott presents data which are the result of observations extending over a period of twenty years in Massachusetts, taken from the *Twenty-Third Annual Report of the State Board of Health*. They are given in the form of a table showing the mortality of eight principal infectious diseases in densely, moderately, and sparsely settled districts. Assuming the average life span of the average to be 45 years in a dense population, it is found that the respective figures for the moderately and sparsely settled districts are 100, 1000, 100,000, 100, and 100,000, respectively, the figures for the dense, moderate, and sparse being 100, 100, and 100,000, respectively. In the case of the dense population, the figures are 100, 100, and 100,000, respectively. In the case of the moderate population, the figures are 100, 100, and 100,000, respectively. In the case of the sparse population, the figures are 100, 100, and 100,000, respectively.

are more than four acres to each inhabitant. It appears by the table that overcrowding has an unfavorable effect upon the mortality from each of the diseases mentioned, except typhoid fever.

2. It is well known that the majority of laborers and artisans are unable to furnish separate accommodations for the isolation of members of their families who may become ill with infectious diseases. Such families usually live in tenements of from one to four rooms, none of which can safely be devoted to the treatment and isolation of individuals affected with dangerous infectious disease.

3. Another important advantage secured by means of isolation hospitals is found in the fact that they enable the ordinary duties of the household, the attendance of the well children at school, and continued work by the head of the family to be carried on without disturbance, for the danger of infection has been removed by the transfer of the sick member of the family to the hospital. In this connection Dr. Abbott refers to the melancholy fact that it has not infrequently happened that the local sanitary authorities of cities and towns have not only rigorously enforced the law relating to non-attendance at school, but also quarantined all the members of a family attacked, old and young, so that the children were deprived for the period of from two to ten weeks or more of their educational privileges at the most important or most receptive period of their lives, and, furthermore, the father was kept from his work in the mill, the factory, or the workshop. Even if he is allowed to work, says Dr. Abbott, his fellow workmen are wont to regard him with suspicion so long as any individual of his household is the subject of an infectious disease. On the other hand, the prompt removal of such individuals permits the school attendance and the employment of members of the family to go on undisturbed.

The diseases which, Dr. Abbott thinks, should be treated in special isolation hospitals are scarlet fever, diphtheria, small-pox, measles, typhus, cholera, and typhoid fever; also, in the Southern States, yellow fever.

MINOR PARAGRAPHS

MENSTRUATION AND INFECTION

The connection between erysipelas and infectious peritonitis has long been considered intimate, and there is some ground for the belief that, from a bacteriological point of view, the two diseases are identical. In the *Praxis* published for the September 1911 issue is an interesting contribution from Dr. Harry Moore, a clinical physician, giving an account of a fatal case of peritonitis which seemingly attacked a healthy young girl under somewhat peculiar circumstances. She had a recently healed, and not extensive, wound with scars from erysipelas. The young girl took an active part in nursing the sick lady, was almost constantly at her bedside and generally succeeded in changing the position of her bed. While the young girl was giving care and taking interest, and the immediate cause of her death was a myocardial rupture which had been found in a dissection for the lady's friend, she was evidently much over a strain, and it was not the least probable that her death was caused by

pression, and soon afterward repeated vomiting. Her courses, which had appeared two days before, were brusquely suppressed. Her death followed in the course of five days, and the post-mortem examination showed conclusively that the disease could have had no other origin than by infection from the naphkin. The case is recorded with all the details, and the author's remarks on it are well worth reading in full.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 16, 1894:

DISEASES.	Week ending Oct. 9.		Week ending Oct. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	25	10	39	10
Scarlet fever.....	50	3	51	4
Cerebro-spinal meningitis...	0	0	1	1
Measles.....	17	3	19	3
Diphtheria.....	108	24	131	37
Small pox.....	7	1	0	0
Tuberculosis.....	105	76	102	128

The New Bloomingdale Asylum, at White Plains, was visited and inspected by an invited company on Wednesday afternoon, the 17th inst.

Changes of Address.—Dr. Russell Bellamy, from Colorado Springs to No. 35 West Thirty-first Street, New York; Dr. Lorenzo N. Grosvenor (Chicago), to No. 928 Kenmore Avenue; Dr. Mary E. Hennessy, to No. 20 East Forty-third Street.

The University of Virginia.—Dr. Augustus H. Buckmaster, of New York, one of the editors of the *American Gynecological and Obstetrical Journal*, has been appointed professor of the practice of medicine and of obstetrics (including gynecology).

Another Proposed Addition to the Medical Curriculum.

The Medical Council of the Province of Brandenburg, whose headquarters is in Berlin, recently addressed to the Prussian Government a petition asking that arrangements may be made for the supply of instruction to medical students on all that concerns insurance against sickness, accident, old age, and infirmity. It is argued that such instruction should be practised as well as theoretical. The German Minister has accordingly sent a circular letter to the presidents of the other provinces of Prussia, asking them to state an official expression of opinion on the utility of such instruction, and the official record is to be sent to the Medical Council.

The Death of Dr. Stuart Douglas is announced as having taken place on Monday, the 14th inst. He was about three years of age, a native of Virginia, and a graduate of the University of Virginia. He had been a student in the medical department of the University of Berlin, Germany, and had received an M.D. degree from that institution.

Army Intelligence.—A list of names of the officers and surgeons of the Army of the United States, who are now in the service of the United States, is published in the *Official Gazette*, of October 10, 1894.

Army Intelligence.—A list of names of the officers and surgeons of the Army of the United States, who are now in the service of the United States, is published in the *Official Gazette*, of October 10, 1894.

Surgeon. Lieutenant Ireland, on being thus relieved, will take station at Fort Stanton, New Mexico, relieving KEEFE, F. R., First Lieutenant and Assistant Surgeon. Lieutenant Keefe, on being relieved, will proceed to and take the station at Washington Barracks, D. C.

PRICE, CURTIS E., Major and Surgeon, will proceed to and take the station at Fort Sill, Oklahoma Territory, upon abandonment of Fort Supply, Oklahoma Territory.

BUSHNELL, GEORGE E., Captain and Assistant Surgeon, will, by direction of the Acting Secretary of War, be relieved from duty at David's Island, New York, by the commanding officer of that post on the receipt by him of this order, and will then report in person to the commanding officer at Fort Hamilton, New York, for duty at that post, reporting by letter to the commanding general, Department of the East.

MACAULEY, C. N. B., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, the extension of leave of absence granted in S. O. 55, Department of the Colorado, September 14, 1894, is further extended one month.

WOOD, MARSHALL W., Major and Surgeon, is granted leave of absence for twenty-five days, to take effect upon being relieved from duty at Boston, Mass.

IVES, FRANCIS J., Captain and Assistant Surgeon, having proceeded with troops to Fort Ethan Allen, Vermont, is, by direction of the Secretary of War, relieved from further duty at Fort Sheridan, Illinois, and will remain on duty at Fort Ethan Allen until the arrival there of APPEL, AARON H., Captain and Assistant Surgeon, when he will report in person to the commanding officer at Plattsburgh Barracks, New York, under the requirements of paragraph 10, S. O., 221, A. G. O., September 20, 1894.

MUNN, CURTIS E., Major and Surgeon, is ordered to Benicia Barracks, California, upon abandonment of Mount Vernon Barracks, Alabama, relieving RAFFERTY, OGDEN, Captain and Assistant Surgeon. Captain Rafferty, on being relieved by Major Munn, is ordered to the Presidio, San Francisco, Cal., for duty.

FLAGG, CHARLES E., First Lieutenant and Assistant Surgeon, is relieved from duty at the Presidio, San Francisco, Cal., and ordered to Angel Island, Cal., for duty.

HUBBARD, VAN BUREN, Major and Surgeon, is relieved from duty at Fort Spokane, Washington, and ordered to Fort McPherson, Georgia, for duty at that station.

WARE, ISAAC P., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Supply, Oklahoma Territory, and ordered to Camp Eagle Pass, Texas, for duty. Upon arrival of Lieutenant Ware at Camp Eagle Pass, STARK, ALEXANDER N., First Lieutenant and Assistant Surgeon, will return to his proper station at Fort Sam Houston, Texas.

GARDNER, E. F., Captain and Assistant Surgeon, is ordered to Boston, Mass., for duty as attending surgeon and examiner of recruits, upon abandonment of Fort Mackinac, Michigan, relieving WOOD, M. W., Major and Surgeon, who, on being thus relieved, will proceed to take the station at Boise Barracks, Idaho, to relieve STEPHENSON, WILLIAM, Captain and Assistant Surgeon. Captain Stephenson, on being relieved, will proceed to and take the station at Vancouver Barracks, Washington.

DUNN, GEORGE D., First Lieutenant and Assistant Surgeon, will, upon the removal of CURTIS, JOSEPH R., Major and Surgeon, at Fort D. A. Russell, Wyoming, and in command of Fort Grant, California, be relieved.

BEAUFY, ARTHUR, Captain and Assistant Surgeon, stationed at Fort Leavenworth, Kansas, is relieved from duty at that post, and ordered to take the station at Fort Leavenworth, Kansas.

SHAW, HENRY A., First Lieutenant and Assistant Surgeon, is ordered to Fort Niobrara, Nebraska, for duty, upon abandonment of Fort McKinney, Wyoming.

POINDEXTER, JEFFERSON B., Captain and Assistant Surgeon, is ordered to Fort Riley, Kansas, for duty, upon abandonment of Fort Bowie, Arizona.

Society Meetings for the Coming Week:

MONDAY, October 22d: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, October 23d: Medical Society of Virginia (first day); Richmond; New York Dermatological Society (private); Buffalo Obstetrical Society; Medical Society of the County of Putnam, N. Y. (quarterly).

WEDNESDAY, October 24th: Medical Society of Virginia (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, October 25th: Medical Society of Virginia (third day); New York Academy of Medicine (Section in Obstetrics and Gynecology); New York Orthopaedic Society; Brooklyn Gynecological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia; Massachusetts Medical Benevolent Society (annual).

FRIDAY, October 26th: New York Society of German Physicians; New York Clinical Society (private); Yorkville Medical Association (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, October 27th: New York Medical and Surgical Society (private).

Answers to Correspondents:

Y. J. G.—We have not heard of any of these societies, and do not know of any Society in the United States that would accept of a diploma from a medical school in Europe and New York.

Alabama, Arkansas, Florida, Maryland, Minnesota, Mississippi, New Jersey, New York, North Carolina, North Dakota, Pennsylvania, South Carolina, Texas, Virginia, and Washington require an individual examination by boards of examiners. California, Colorado, Connecticut, Delaware, Illinois, Iowa, Kentucky, Louisiana, Missouri, Montana, Nebraska, New Mexico, Oklahoma, Oregon, Tennessee, Vermont, and West Virginia require supervision of a diploma by some designated body, authorized by law, to determine its validity, or, in the absence of legislation, the power of a medical society. Arizona, Georgia, Idaho, Indiana, Kansas, Michigan, Ohio, South Carolina, Wisconsin, and Wyoming require the presentation of a diploma from a medical school in the United States, and no other diploma, to be received from the Board of Commissioners. It is necessary in the Government of California by a diploma from the Central Medical Society, and in the Government of Texas by the State Board. The second condition of receiving a diploma is a certificate from the medical school, and the third condition is a certificate from the medical society. The first condition is a certificate from the medical society, and the second condition is a certificate from the medical school. The third condition is a certificate from the medical society, and the second condition is a certificate from the medical school. The first condition is a certificate from the medical society, and the second condition is a certificate from the medical school. The third condition is a certificate from the medical society, and the second condition is a certificate from the medical school.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 12, 1894.

Strychnine as a Tonic during Gestation.—Dr. T. RUDGWAY BARKER read a paper entitled When is the Administration of the Sulphate of Strychnine Contraindicated during Gestation?

It was not his purpose, he said, to depreciate or undervalue the great benefit that sulphate of strychnine was capable of rendering in the majority of the cases of pregnancy.

The allegations made for it by Dr. Duff, of Pittsburgh, who had devoted himself with much enthusiasm to the study of this drug in its relation to obstetric practice, were not, he thought, without justification; but, with the estimable conservatism of a seeker after scientific truth, he left the subject open for further study and research, awaiting until time and a wider experience should prove its merits.

In a paper read before the South Side Medical Society of Pittsburgh, and in one presented to the American Association of Obstetricians and Gynecologists, in 1893, he had given his clinical experience.

At the forty-fifth annual meeting of the American Medical Association, recently held at San Francisco, he had again called the attention of the profession to the value of strychnine, and pointed out that it rendered abortions and premature deliveries less frequent by giving tone to the uterine muscles and nerves as well as by its general tonic influence.

These statements were beyond question correct in the vast majority of instances; but he who would avoid error and misfortune must bear in mind that every rule had its exception, and that the latter, though often overlooked, was no whit less important than the former.

The speaker had given sulphate of strychnine to a score or more of women during gestation with the happiest results, and so general had been the improvement in their condition that he had begun to think that there was no exception to this rule, but he had not long been left in doubt, for, as the following case reported would show, he had met the exception in a most unexpected but none the less pronounced form:

Mrs. G., primipara, aged twenty-nine years; general health good. She had menstruated last in October; previously she had been regular. She had suffered greatly from morning sickness and distressing nausea for nearly four months, which had been uninfluenced by internal medication. There had been besides these symptoms costiveness and a more or less irritable bladder. The appetite had been poor, and loss of flesh had been quite marked as the pregnancy advanced.

In the early part of her pregnancy she had had some pain in the lower part of the abdomen, and this had soon been aggravated by soreness and pain which had persisted throughout the day and night. The nervous depression, which had been the result of the foregoing symptoms, had been relieved by the use of the sulphate of strychnine.

The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine.

The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine. The patient had been in the hospital for some time, and had been treated by the use of the sulphate of strychnine.

To judge from the size of the abdomen and the activity of the fœtus, development had been progressing favorably. There had existed, however, double ovarian tenderness, which denoted congestion of a pronounced type, and to this the speaker had ascribed in part the great mental depression, though, of course, much had depended upon the anæmic blood supplied to the nerve centers.

Deeming this case one suitable for the administration of sulphate of strychnine from a careful analysis of the objective and subjective symptoms, he had determined to place the woman upon the use of one twentieth of a grain, twice a day, with the hope that it would stimulate a healthy nerve action and relieve, as had been alleged, the uterine irritability which had threatened to result in an abortion.

He reasoned that the nervous disturbance had been due to anæmia of the central nervous ganglia and had involved the sympathetic system as well; that the uterus had threatened to expel its contents because the nerves controlling its muscular coats had been in a state of hyperæsthesia dependent upon insufficient nutrition. With this idea the speaker had placed the patient upon the use of the drug, which experience had proved to be the best suited to overcome just such a condition as he had found present.

Within thirty-six hours the uterus had become more rebellious; its muscular contractions had increased rather than lessened in violence, and had recurred with greater frequency. The dull pain which had persisted for several days had now become acute and intermittent, and had radiated from the umbilicus to the loins.

An abortion had undoubtedly been threatened, and might almost have been considered inevitable. The use of strychnine had been promptly discontinued, as it had undoubtedly only made matters worse, causing a passive uterine contraction to become active, and thus augmenting the expulsive uterine forces.

A sedative mixture containing morphine, chloral, and bromide of sodium in solution had been ordered to be taken every hour, and the patient had been put to bed and directed to keep perfectly quiet. In a few hours the pains had been allayed and the uterine contractions had become feebler and had recurred at longer intervals. These signs had given rise to a hope that the patient might yet escape an abortion.

Twenty-four hours had elapsed with no return of the contractions. The prospect had seemed to brighten, but only to give place within another twelve hours to a sudden and aggravated attack of pain, followed by strong uterine contractions, which, acting upon the cervix, had soon overcome its constricting fibers, and an abortion had been the result. In a few hours the whole uterine contents had been expelled, much to the regret and disappointment of both physician and patient.

Thinking that one cause of gestation in which strychnine might be said to have been the exciting cause of the abortion, the speaker had felt that this pregnancy had not also been caused in this manner, and he was not concerned for the fact that it had been caused in this way, since its administration in a case

in which it was the cause of the abortion reported, could not be said to have been caused by the fact that there was no abortion when it was given in the case of the patient who would not have given strychnine, since clearly it had been contraindicated.

Instead of its acting upon the uterus, the speaker thought it might have acted upon the brain, and had proved the rule of an excitant, and the speaker thought it very much more likely to be placed in the brain.

Some might take exception to the size of the dose (one twentieth of a grain) twice a day; this, the speaker granted, was not a small dose, but at the same time it was one he had frequently given with the best results, and he had found that a much smaller dose failed to be beneficial.

He did not, therefore, think that the amount administered made any material difference. That strychnine required to be given during gestation with much more care than had heretofore been exercised he thought was very evident. Moreover, when there existed great mental depression, associated with symptoms of distress and pain referable to the pelvic region, with involvement of the uterus, he thought the administration of strychnine was contraindicated, for under such conditions it was more than likely it would act as an irritant and not as a sedative, and so would tend to produce an abortion, the very danger one was struggling to avoid.

Strychnine, then, it would appear, was indicated in cases of gestation which required a powerful nerve tonic, but contraindicated when such cases were complicated by pronounced pelvic disorders of a nervous type.

Abdominal Surgery.—A report of a group of cases covering almost the entire field of abdominal surgery was made by Dr. M. PRICE.

Dr. J. M. BARTON said that Dr. Price had reported one case where he had removed the uterus because it had produced obstruction of the bowels, the patient being in collapse at the time of the operation. Under these circumstances the usual surgical procedure would be to make a temporary artificial anus by a small abdominal incision, to bring out a single loop of the distended bowel, the distention showing it to be above the obstruction, and to open it at once. This was Mr. Treves's method, and was one he had used with some success on several occasions. If the patient rallied, extirpation of the uterus or such other radical surgical procedure as might be required might then be resorted to, with the patient in a condition to stand the operation.

There was one point he would like to call attention to in the appendicitis operation reported. He understood the doctor to say that he did not close any portion of the abdominal incision. If not closed it was very liable to be followed by a hernia. In his earlier operations he had had several cases of hernia, but in his later cases he had been fortunate enough to avoid this by using the gauze not as a drain but only to isolate the rubber drain, and by at once closing nearly all the wound.

If the pus was deep he made the opening through the abdominal walls not less than four inches in length, and after opening the abdominal cavity, and before opening the abscess or attempting to remove the appendix, he prevented infection of the general peritoneal cavity by surrounding the place where he proposed opening the abscess with gauze, packing it under the edges of the incision so as to keep the movable intestines away from the wound and the danger of infection from the pus. The abscess was then opened and two rubber drains were introduced to the bottom of it, and the abdominal wound closed by the interrupted suture, allowing only the ends of the rubber drains to protrude; the gauze was left inside, with only a corner showing, by which to seize and remove it on the third or fourth day.

The two stitches next to the rubber drains were tied in a bowknot, so that they might be readily retied if they had to be loosened to remove the gauze. In all the cases in which he had used this method the patients had recovered without any hernia whatever.

Of course, if the abscess was in contact with the anterior abdominal wall and the general cavity shut off by adhesions, no

But she naturally would be nervous until she had made up her mind positively that it had to be removed. His experience had been that so far as mental derangement was concerned—not nervousness—patients with fibroid tumor had been free from it.

In regard to operation in these cases, he agreed with Dr. Ashton as to the propriety of letting small fibroids alone. When they grew rapidly or threatened malignancy it was time enough to take them out. He had now under observation cases of fibroid where he considered that operation would be so dangerous as to threaten life, and he was sure that by proper management they would tide over the menopause and get well if

Dr. WEENER stated that the case in which she had repaired the perinæum and cervix had been one that did not occur in her own practice as an obstetric case. The patient had come under her observation a year after the child was born, so that it could not properly be called an *acute* puerperal case.

Dr. PRICE said that if Dr. Ashton looked over the case of appendicitis he would find that he put his finger on what he had been going to remove. He knew that there was a diseased ovary and a diseased appendix and cut for it, and removed it. He thought that for eight years he had never done an exploratory operation. He had never opened the abdomen to make his diagnosis, yet Dr. Ashton was in a measure correct. In abdominal surgery exactness was impossible, but a man who was not able to say when he had a big ovarian tumor or a big fibroid was certainly deficient in diagnostic ability, and should not operate until he was sure he had something to remove.

In regard to fibroid tumors of the character that Dr. Massey has mentioned he has never seen them. The patients had never come to him until they were distressed by the condition and were suffering. In the thirteen cases reported there had not been one in which the tumor had not been larger than his head. When a tumor was of the size of a cherrystone to that of a Lima bean, such as Dr. Massey told us about, the speaker thought that the knife should not be used. He agreed that they were electric cases if you could find them, but no one but an electrician could detect them. He thought that if the cases of extensive fibroid disease were carefully examined it would be found that a number, he did not say all or nearly all, of them had mental symptoms that were marked, and bordered closely

with suppurative disease any number of them were to-day in

with Dr. Werner when she said that she did not advocate the

finger on the thorn that had driven that woman with pain and suffering to the madhouse, remove it. They were there by the hundreds, and operators throughout the country were saving

The second patient died of acute myocardial infarction, possibly at the site of the infarction.

Finally, we have a positive expectation. When the support

we may or we cannot be justified that provided by a median

operation. Where one removed the appendix the symptoms of abscess were not so marked, but you had symptoms of obstruction of the bowel. Here one had to make a median incision in order to detach the adhesions. If one found that the abscess was mapped off from the peritoneal cavity one could make a drainage incision above the crest of the ilium. In the cases that fell into his hands there was generally a well-marked abscess, and drainage was the only indication, and no effort was made to find the appendix.

He thought that the practice of packing the whole abscess with gauze was unsafe. If these cases were opened, irrigated, and a gauze and rubber drain put in, the gauze being replaced every twelve or twenty-four hours, they would all get well. He did not care if the whole head of the colon was gone, they would get well without a faecal fistula. He had seen large quantities of faeces pour out for eight or ten days and the opening finally close. If one made the incision too long one might go beyond the abscess cavity and get into the abdomen. A two-finger opening would enable one to do all that was necessary.

AMERICAN PÆDIATRIC SOCIETY.

Sixth Annual Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The Vice-president, Dr. F. FORCHHEIMER, of Cincinnati, in the Chair.

(Continued from page 475.)

A Case of Cyanosis.—Dr. WILLIAM F. NORTHROP, of New York, read a paper, and demonstrated the lesions found in the heart. The case had been one of more than usual interest on account of its so closely conforming to the descriptions usually given in the books. The patient had been a boy four years and a half of age, with pale cheeks and dusky lips and fingers. The fingers had been knobbed, and his belly had been prominent. He had suffered from frequent attacks of dyspnoea, particularly after meals. The physical examination had shown a soft, purring thrill over the base of the heart; the apex beat half an inch outside of the left nipple line; the cardiac dullness extending from the right sternal border to the left nipple, and a loud, harsh systolic murmur heard along the left margin of the sternum, and distinctly localized at the junction of the second interspace on the left side with the third rib. This murmur had not been transmitted to the left or along the aorta. The second sound of the heart had been exceedingly feeble. The autopsy had revealed a marked hypertrophy of the right ventricle; a distention of the aorta; an unusually small pulmonary artery; an impervious ductus arteriosus; a foramen ovale which had been practically closed; a normal left ventricle; an incomplete septum at the auricular end; and a constricted conus arteriosus. A probe could not easily be passed from the pulmonary artery into the right ventricle, because the pulmonary artery had been at right angles to the axis of this artery, and *(circled in book)* the case had been evidently one of early fatal endocarditis with constriction of the conus arteriosus. This endocarditis must have occurred early in development, before the septum was completed, so that Nature could elect the very best point at which to effect a compensatory circulation. The aorta, receiving a direct stream of blood from both ventricles, had been distended; the pulmonary artery, receiving very little blood, had contracted small.

The Nomenclature of Diseases of the Mouth.—Dr. T. M. Rosen, of Boston, the chairman of a committee on this subject, presented the report. He said that the committee advocated uniformity in the designation of diseases, so that a disease could

Micron-wrapping. (D. Goss, "The Secret of Micron-wrapping," *Scientific American*, 1912, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 91

diaphragm. The human organism plays an important physiological rôle which depends especially on the constitution and on the functions of the skin. It is a question of medicinal polarization on the cutaneous cells, which act as accumulators, and afterward render by degrees to the lymphatic and sanguineous circulation the elements with which they have been impregnated. 2. The quantity of medicaments absorbed depends not only on the electric intensity employed, which, beyond a certain degree, has only a relative importance, but especially on the extent of the skin which has been subjected to the electric action, and above all on its physiological capacity of absorption. This capacity varies according to the density of the solution used and to the nature of the medicaments employed. 3. Cataphoresis has the following advantages: 1. It produces its maximum effects upon the part submitted to the electric bath. 2. It is felt secondarily through the entire organism. 3. It subjects the organism to the influence of medicaments for a greater length of time than any other method of absorption, as the limit is reached only when all the medicinal principles with which the cells of the skin have been impregnated have been given up to the organism. 4. The therapeutic action depends on two inseparable elements: The action of the constant current and the action peculiar to the medicament used. The two effects are combined in such a way that it is impossible to obtain the same results by the isolated action of each. 5. The action of cataphoresis manifesting itself with its maximum at the entrance of the current, it is the electro-positive bodies which will have greater chances of passing. Their effect will be proportional to their electrolytic power and, consequently, to their conductivity. Nevertheless, one must take into account, on the one hand, the idiosyncrasies and, on the other hand, the particular value of certain salts, which experimentation alone can ascertain. 6. The intimate nature of the processes by which the medicaments act remains to be made known: Oxidations due to the continued current or chemical combinations from the reaction of the medicaments.

All hypotheses are permitted, says M. Destot, and it is to be presumed that the phenomena produced are very complex, and should depend on the nature of the skin and the organic cells, and also on their vascularization and innervation. It is impossible to apply to cataphoresis the laws of electrochemistry, which are incessantly changed by physiological processes.

Nitrate of Silver in Phthisis.—The *Lancet* for September 29th contains an article on the uses of nitrate of silver of which the following is the substance: Since the introduction of bromides, the internal employment of nitrate of silver has been so much discarded that it is surprising to find it once more recommended in a chronic disease like phthisis. The reasons for a revival of interest have, it is alleged, not been stated, and no remedy are so well known that it is unnecessary to dwell upon them, and an increased experience with this drug in phthisis will emphasize the desirability of trusting chiefly to its external

He maintains that the immediate effect of nitrate of silver is to cause contraction of the small vessels, thus diminishing the supply of blood to the tissues, and hence that it is useful in epilepsy, in chronic cerebral congestion, and in various forms of chronic myelitis. It is suggested that it acts on the bronchi and lungs in the same manner. It can be suitably combined with opiates, henbane, bitters, and other drugs. The dose is from one seventh to one third of a grain during the twenty-four hours. The use of this drug was proposed many years ago as a treatment for phthisis, both pulmonary and laryngeal, but did not meet with much acceptance at the hands of the profession.

Dr. Crocq's paper is accompanied by a report of twenty-one cases of tuberculosis in which nitrate of silver appears to have acted very beneficially.

Drizzling in Infants.—The *Journal des praticiens* for September 26th contains a review of a thesis on this subject by M. J. R. Sanchez de Silveira. The writer remarks that the results of the author's observations are that the physician (on the evidence of writers, it is true) allows himself to be persuaded to admit certain ideas which have been current among the non-medical public on the subject of the salivary secretion.

This function is established much earlier than is supposed. It may appear as early as the twentieth day, and, although it may occur frequently, drooling should not be classed among absolutely physiological phenomena. If a sufficient investigation is made, it will be found that infants who drool have been allowed the bad habit of sucking various objects, or that there is some defect of alimentation. This daily drooling of nurslings should not be confounded with that which occurs in the night, which is due to adenoid growths. It is not a matter of indifference whether an infant drools or not, as the constant moisture thus engendered contributes to the development of repeated bronchitis, and the writer thinks that medical intervention should certainly be employed when an infant drools, but, so far as the review is concerned, he does not intimate what that intervention should consist in.

The Bismuth Subnitrate of Commerce.—The *Lyon médical* for September 30th publishes an abstract of an article on this subject in the *Bulletin de la Société de pharmacie de Bordeaux*, in which M. P. Carles warns pharmacists against the partiality that they accord to light bismuth subnitrate, and reminds them that in order that the heavy bismuth subnitrate, that is to say, the normal, may exert all its efficiency, it is necessary that it should be administered only in a state of intimate division. The light subnitrate contains a certain quantity of carbonate, which sufficiently explains the relative lightness of the product and its poverty in nitric acid. When the therapeutic action of bismuth subnitrate is closely studied, it is evidently not a matter of indifference that the proportion of nitric acid is small.

According to M. Carles, M. Dupetit, and M. Duboué, bismuth subnitrate is a powerful bactericide. It is to this primordial action that it owes those virtues which have been for a long time universally appreciated in gastro-intestinal diseases that are the result of morbid fermentation. The good effects, says M. Carles, which have been obtained from its employment in urethritis come from no other cause. It owes, also, its efficiency to the independent action of its oxide and its acid. Of its oxide, because it has the property of saturating the acid secretions of the stomach, or of neutralizing on account of the same qualities and, finally, on account of the slow chemical action which it exercises on the intestine. From the time it comes into contact with these secretions, the subnitrate always meets with hydrosulphuric emanations which, although transforming it into the black sulphide, set a corresponding pro-

Lectures and Addresses.

THE TEACHING OF ANATOMY.

By WILLIAM KEILLER, F. R. C. S. Ed.

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF TEXAS,
FORMERLY LECTURER ON ANATOMY IN THE SCHOOLS OF
MEDICINE, BOSTON, AND CHICAGO.LECTURE II. METHODS OF TEACHING; PREPARATION
SERVICES FOR DISSECTION.

In giving the following description of the methods of anatomical teaching which we use in the University of Texas it is necessary to premise that we have a three-years' strictly graded course, the students being required to adhere rigidly to the following roster:

FIRST YEAR.—*Monday:* Section work in chemistry from 8 to 11 A.M.; in histology, 9 to 11 A.M.; anatomy, 11 A.M. to 1 P.M.; physiological laboratory, 2 to 4 P.M.; physiology, 4 to 5 P.M. *Tuesday:* General pathology, 8 to 9 A.M.; section in histological laboratory, 9 to 10 A.M.; bandaging and minor surgery, 10 to 11 A.M.; dissecting, 11 A.M. to 1 P.M.; section work in chemical laboratory, 5 to 6 P.M. *Wednesday:* Section work in chemistry, 8 to 11 A.M.; in histology, 8 to 10 A.M.; anatomy, 11 A.M. to 1 P.M.; history of medicine, 2 to 3 P.M.; chemistry, 3 to 4 P.M.; physiology, 4 to 5 P.M. *Thursday:* Histology, 8 to 9 A.M.; section in histological laboratory, 9 to 11 A.M.; dissecting, 11 A.M. to 1 P.M.; chemistry, 3 to 4 P.M.; physical diagnosis, 4 to 5 P.M. *Friday:* General pathology, 8 to 9 A.M.; section in histological laboratory, 9 to 10 A.M.; materia medica, 10 to 11 A.M.; anatomy, 11 A.M. to 1 P.M.; physiological laboratory, 2 to 4 P.M.; physiology, 4 to 5 P.M. *Saturday:* Physics, 9 to 10 A.M.; dissecting, 10 A.M. to 12 M.; materia medica, 12 M. to 1 P.M.

SECOND YEAR.—*Monday:* Medical clinic from 8 to 9 A.M.; surgical-operative clinic, 9 to 11 A.M.; pathology (read bones), 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Tuesday:* Medical clinic, 8 to 9 A.M.; surgical ward class, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; obstetrics (half term), pathology (half term), 11 A.M. to 12 M.; chemistry, 12 M. to 1 P.M.; dissecting, 2 to 4 P.M.; surgery, 4 to 5 P.M.; practice of medicine, 5 to 6 P.M. *Wednesday:* Medical clinic, 8 to 9 A.M.; surgical ward class, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Thursday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 11 A.M.; obstetrics (half term), pathology (half term), 11 A.M. to 12 M.; chemistry, 12 M. to 1 P.M.; dissecting, 2 to 4 P.M.; surgery, 4 to 5 P.M.; practice of medicine, 5 to 6 P.M. *Friday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Saturday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M.

THIRD YEAR.—*Monday:* Medical clinic from 8 to 9 A.M.; surgical-operative clinic, 9 to 11 A.M.; pathology (read bones), 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Tuesday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Wednesday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Thursday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Friday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Saturday:* Medical clinic, 8 to 9 A.M.; surgical-operative clinic, 9 to 10 A.M.; pathological laboratory, 10 to 11 A.M.; chemical laboratory, 11 A.M. to 12 M.; therapeutics, 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M.

A.M.; obstetrics (half term), special pathology (half term), 11 A.M. to 12 M.; pathology (half term), 12 M. to 1 P.M.; anatomy, 2 to 4 P.M.; physiology, 4 to 5 P.M.; obstetrics, 5 to 6 P.M. *Sunday:* 8 to 11 A.M.; obstetrics (half term), special pathology (half term), 11 A.M. to 12 M.; physical diagnosis, 12 M. to 1 P.M.; ophthalmology, 2 to 3 P.M.; hygiene, 3 to 4 P.M.; surgery, 4 to 5 P.M. *Monday:* 8 to 11 A.M.; obstetrics (half term), special pathology (half term), 11 A.M. to 12 M.; physical diagnosis, 12 M. to 1 P.M.; gross morbid anatomy, 2 to 3 P.M.; operative surgery, 3 to 5 P.M.; practice of medicine, 5 to 6 P.M. *Saturday:* Clinic on diseases of ear, nose, and throat, 8 to 9 A.M.; St. Mary's Hospital surgical clinic, 9 to 10 A.M.; gynecological operative clinic, 10 A.M. to 12 M.

It will be seen that two hours daily in the first year and the same time in the second year are given to my subject. The junior students are required to get up all the bones and joints of the body and everything about the upper and lower extremities; the second year's students get up the trunk and head and neck, brain, eye, and ear, and the elements of embryology. To allow the majority of the students to gather, the first week of the session is occupied with lectures and quizzes on introductory matter. As soon as the class is formed (our matriculation roll is closed two weeks after the opening of the session) the junior students are divided into two sections, the one about to dissect the arm, the other the leg. *No student is allowed to touch a body till he has passed a satisfactory examination (taken \$100 per cent) on the bones of the part he is to dissect*, and the first fortnight after the formation of the class is occupied in daily lectures and quizzes on the bones.

Believing as I do that a minute knowledge of the bones must form the foundation of all good anatomy, the teaching on this branch is most thorough, and in his examination the student is required to mark with chalk most accurately the attachments of muscles and ligaments. To facilitate his studies the bone room is supplied with a set of accurately painted bones screwed to the tables in rendering glass cases and a large supply of bone (about 100) may be allowed the expression, enables each student for a short period to take home bones for practice.

The bone examination satisfactorily over, dissecting commences. The second method is followed, and a lecture precedes the dissection of each major dissection and for one day more alternating. The bone anatomy is thorough, and it takes till the Christmas holidays for each section to master the arm and leg separately. During the holidays each man has a written and printed assignment on the part dissected, and after the holidays he returns, chooses their parts, the whole class commencing to get up the skull, nose, brain, and spine.

At the close of the winter a final examination is held in the whole work of the year and a prize is given to the

and final average of fifty per cent. is required to pass to the following year.

The method of proceeding in the second year is similar, the sections being abdominal and thoracic, and head and neck in the other, and the class amalgamating for the study of the brain, eye, and ear, and embryology. At the end of the second year the final examination includes the whole body, while to insure some revision during the holidays students on entering the second year must pass an examination on the work of the previous session.

Preparation of the Bodies.—In the basement of the building, and connected with the dissecting room by an elevator for raising the bodies (the elevator also having a door to permit surgical bodies to be taken to the operative surgery class), is the preparing room. No anxiety need be felt about the shaft distributing odors, as there will be no offensive odor from a properly kept preparing room.

It should be a large room, with concrete floor sloping toward a central grating over a drain, with large sink, abundant water supply and rubber hose to reach at least to the center of the room. A dissecting table, side table, and shelving are necessary; and one or more tanks, according to the requirements of the school and the supply of bodies. Here I have to collect bodies all summer that I may have an efficient supply for the winter.

For the preservation of the bodies I have tried various fluids. When I commenced as lecturer on anatomy in the School of Medicine, Edinburgh, I had at the same time a considerable obstetric practice, and I at once felt the necessity of thorough preparation of my subjects that I might be a safe obstetrician.

Glycerin, wood alcohol, and a small proportion (one or two drachms to each body, I think) of corrosive sublimate was then being used at Surgeons' Hall, where I had been demonstrator. This gave fair but not quite satisfactory results. I used a quarter of a pound of corrosive sublimate dissolved in a gallon of wood alcohol, injected by a siphon apparatus into one common femoral artery at an elevation of about four feet, another gallon being used the following day if the body did not bleach throughout. The body was then wrapped in a sheet steeped in a strong corrosive-sublimate solution, and then in waterproof, and placed in a fairly close wooden tank. The result was an agreeable surprise. The method had the one fault that it whitened the bodies; but that I scarcely counted a fault. The muscles stood out in their natural prismatic form; the relations of vessels were beautifully preserved; but when the abdomen was opened the results were magnificent. The liver, instead of being whitened by the fluid when removed, retained its natural color; the lungs were of a rose color; the stomach, spleen, kidneys, adrenals, and pancreas maintained their natural color. The heart was of a deep red color, and the vessels were of a deep red color, and a good specimen of the heart and lungs was obtained. The body was then wrapped in a sheet steeped in a strong corrosive-sublimate solution, and then in waterproof, and placed in a fairly close wooden tank.

But what was the result? The bodies were of a deep red color, and the muscles were of a deep red color, and the vessels were of a deep red color, and a good specimen of the heart and lungs was obtained. The body was then wrapped in a sheet steeped in a strong corrosive-sublimate solution, and then in waterproof, and placed in a fairly close wooden tank.

foster the growth of fungi. After various trials I have found the following method gives excellent results: The apparatus consists of a stoneware jar capable of containing four gallons, fitted with a wooden stopcock. It can be run up to the roof by a rope and pulley so as to give the desired pressure. Ten feet of rubber tubing is attached to the jar, a glass (or hard-rubber) stopcock at the lower end of the tubing (or a clamp), and another short length of tubing connecting this with a glass T-tube. The last should be of the shape and size shown in the figure that it may fit into a short slit in the common carotid artery.



In making this tube it is important that the two bulbs shall be as short as possible, the distance *a b* not exceeding an inch. It is evident that such a tube can be slipped into the artery through a slit the length of *a b*, and then the vessel pulled up on both ends and tied. Thus the preservative is forced with equal pressure up and down the vessel. The selection of the artery is a matter of some importance, and after having tried the common femoral and the first part of the aorta, I find the right common carotid the best vessel where only two men are to be put to dissect the head and neck. The lower carotid triangle of that side is spoiled, but the other side is available. The artery is easily found by the dissecting-room assistant after he has been shown it once; it gives a much better chance of injecting the whole body uniformly than any other vessel, and the internal jugular vein is reached by the same incision—a matter of some importance, as I shall presently show.* In addition to the above apparatus, corks to fit the vertical end of the T-tube are necessary; and it is well to have a piece of straight glass tubing at hand of the widest possible bore that will pass freely into the internal jugular vein and long enough to pass down that vessel into the right auricle. The jar is filled with the following preservative:

Corrosive sublimate.....	§ viij;
Chloride of zinc.....	§ xxviij;
Strong hydrochloric acid.....	§ ij;
Water.....	§ cclx.

I will discuss the preservative later on, but shall at present go on with the process of preparation.

Reflect the skin over the lower end of the right sternomastoid by a V-shaped incision, throw up the sternomastoid, and expose the common carotid and internal jugular. Make an incision in the carotid just large enough to admit the T-tube; tie it in; pass two ligatures under the internal jugular vein, but do not tie them; lay the body down on the floor and open the vein freely. Now, by raising the legs and trunk, empty the veins of all the blood that will run out of the jugular, if necessary passing a tube down into the heart to dislodge blood clot. Run the air out of your rub-

*Where it is necessary that the whole head and neck on both sides be available, the right common carotid is the best vessel to inject to, but care to not cut the vessel, and use pressure all over the body. The size of the artery is compared vertically the two halves of the sternomastoid (see fig.) and the vessel is not cut, and has never commended itself to me.

ber tubing and connect with your T-tube. As the injection reaches the capillaries it will immediately turn the tissues to a pale gray, and this, with the swelling of the parts, will be the test of the thoroughness of your injection. Much more blood will at once be forced out by the jugular vein; let this run, occasionally increasing the intravenous pressure by putting your finger on the vein till the fluid runs clear and free from blood; then tie both ends of the vein and go on with the injection. It is better to have from eight to ten feet of pressure. If the feet do not bleach readily, raise the whole trunk so as to get as much pressure as possible on the extremities. The injection finished, remove the rubber tubing and put a well-fitting cork in the T-tube. The body may now be put into the tank for three days. On the fourth day inject the arteries with the colored injection, remove the T-tube, tying the vessel, and shave the body, if that has not been done at first. Now, if the body is to be dissected at once it may be taken to the dissecting room the day following the colored injection; but if it is to be kept for some time the brain should be removed and placed in wood alcohol, the calvarium replaced, the scalp stitched up, and the body consigned to the tank.

The brain will usually keep well if the alcohol be once changed; but if it be not firm and well whitened on its removal from the skull it may be necessary to remove the pia mater to allow the spirit to penetrate it. Cotton should be put in the bottom of the jar to support it and into the great longitudinal fissure and between the cerebellum and cerebrum to allow the spirit to reach all its parts. They are afterward to be distributed to the senior students for dissection. For ordinary dissecting purposes, and especially after the body has been injected as above described, alcohol is the best hardening agent for the brain. Brains from fresh, unprepared bodies should be injected twice (at interval of three days) with Müller's fluid, but not left longer than two weeks in it, lest they get too brittle. The hardening should be finished in alcohol.

Preserving Tank.—The nature of the tank will depend on the climate, the demand for and supply of bodies, and the number of bodies that must be kept in stock and the length of time they have to be kept. In any case the tank should be made of two-inch planks bolted together and calked so as to be watertight. It should on no account be zinc- or lead-lined, as even lead will be corroded by the fluids in use.

The length should be just six feet eight inches inside, and the depth not over three feet, that there may be no difficulty in lifting the subjects out. It should be raised a few inches off the ground, and the lid, hinged at the side next the wall, should be connected to the roof by a rope and pulley so weighted that one man can raise the lid, which should then remain open as long as desired. If the climate be cold it will be well to paint the body with some twenty percent alcohol and varnish and seal wrap it in a cloth and waterproof, or to wrap it in a sheet steeped in wood alcohol or in one-per-cent, corrosive sublimate, and water proof, the sheet afterward being put in the tank and removed. The tank need only have as high as two or three feet of

mercurial solution in the bottom to keep the atmosphere damp.* In such a climate as this, and where bodies must be collected all summer to supply the winter's demand, nothing short of immersion will suffice.

My pickling tank is filled with water containing three ounces of corrosive sublimate, four ounces of alum, and ninety ounces of common salt to each cubic foot of water. This solution serves for one year, being changed at the end of the winter session. It need not be thrown away, but can be filtered through a large piece of flannel and a little more salt added. The alum helps to prevent the horny layer of the epidermis from separating. The bodies must be weighted with bricks or otherwise kept completely under cover.

Ere we pass to the care of the bodies in the dissecting room let me give a few recipes.

1. *Preserving fluid for injecting into the arteries:*

Corrosive sublimate.....	viii;
Chloride of zinc.....	xxvii;
Strong hydrochloric acid.....	vi;
Water.....	ccclx.

For one whole body.

A large porcelain mortar and pestle are used for dissolving this and for mixing the paint injection. Grind the corrosive sublimate to fine powder and dissolve with the aid of sufficient water and some of the acid; then dissolve the chloride of zinc with the rest of the water and acid, and mix both fluids together. The excess of acid is necessary to dissolve any carbonate of zinc that may have formed. Dry chloride of zinc is difficult to keep. It is good to weigh it out immediately on receiving it from the chemists into portions of twenty-eight ounces each; add water and some acid and keep it in solution till required.

I have not had good results with arsenical fluids. The bodies have not kept so well with me, and I consider the hardening effect of the zinc and mercurial salts on the brain, liver and spleen, etc., of the utmost importance.

2. *Coloring mass for arteries:*

Turpentine varnish.....	5 xv.
Turpentine.....	5 i.
Boiled linseed oil.....	2 iiss.;
White lead (either in powder or wrought up with oil as got in the paint stores), lbs. ij;	
Red lead.....	lb. ss.;
Lead acetate (strong solution).....	1 pss.

Grind together in the mortar the turpentine and red lead; mix this thoroughly with the white lead and then with the linseed oil and turpentine, adding each slowly and mixing vigorously. Having got this into a uniform paste, and having the syringe made and ready for use, add the turpentine varnish, stirring thoroughly and squandering it through a fine wire screen and filter at once. It is necessary, after the material is added, to shake the syringe well, and to use the material as soon as it is made, as it is very sticky and does not allow itself well to be tipped out.

* A pig and a lamb were kept in the tank for several months.

of the best fluids for coarse injection I know of.* The mortar must be wiped out with sawdust, and it and the syringe cleaned thoroughly with turpentine immediately after use. Of course this (like all other coloring masses) is thrown in with a brass syringe, considerable but steady and gradual pressure being used. The syringe is rather important. The old type of large anatomical syringe is a most clumsy instrument, recalling the age of the blunderbuss among firearms. My own syringe is extremely convenient and gives perfect satisfaction. Its barrel is eight inches long, two inches in diameter inside, as light as is consistent with strength, and holds fourteen ounces. The packing of the piston consists of tow, which is not so easily put out of order as a leather packing, and is easily renewed. There is a stopcock on the syringe, besides the movable one, which last should be ground to fit movable nozzles of various sizes (to suit radial, brachial, and carotid arteries, and one for the aorta), and should have a groove on it to tie a rubber tubing on if necessary. The graded nozzles should fit either on the syringe or on the movable stopcock. Where glass nozzles, as the T-tube, are used (I use nothing but glass nozzles, they are so easily made and do not corrode), they are to be connected to the stopcock by a short length of stout, unyielding rubber tube.

I should say that I owe the foregoing recipe for a coloring mass to the kindness of my respected teacher, Dr. J. Macdonald Brown, of Surgeons' Hall, Edinburgh.

The old-fashioned plaster-of-Paris injection is still in use in some places. It is easily used and is clean; but the vessels so injected are rigid and apt to break. The secret of success is to use it thin and use it quickly. No coloring agent containing an aniline dye must be employed. They diffuse and stain the tissues all round. Red lead and vermilion (the latter only for very special purposes) are the only eligible reds.

In the winter months, in more northern latitudes, the following gelatin mass might be used. I employed it in Edinburgh for some time with great satisfaction, it is so clean and easily used, and demonstrates the vessels, from the largest to the smallest, so clearly. It does not set well, however, in latitude 33° N. (or thereabout):

Take of gelatin, 10 grains; of bichromate of potassium, 10 grains; of water, 100 grains.

Put the gelatin in a mortar and add the water, and mix to a paste of gelatin to four of water.

Add the bichromate of potassium, and mix to a paste of gelatin to four of water.

Put the paste in a mortar and add the water, and mix to a paste of gelatin to four of water.

Put the paste in a mortar and add the water, and mix to a paste of gelatin to four of water.

Put the paste in a mortar and add the water, and mix to a paste of gelatin to four of water.

thus requiring five ounces of gelatin. Prepare twenty ounces of each of the above solutions and mix as directed. The arteries, of course, are turned yellow, but it shows out very clearly.

To Prepare Waterproof Slating.—Finding the ordinary oiled cloth which I could purchase exceedingly liable to tear, I had a talk with a sailor one time when I crossed the Atlantic about how he prepared his oiled coat, and have my own sheets prepared now by the janitor. Wring the sheets out of strong brine (five pounds of common salt to a gallon of water). Dry as thoroughly as possible. Then immerse them in boiled linseed oil, and wring out the excess. Hang them up to dry in a good airy place, and keep them hanging up when not in use in some convenient place (the roof of the preparing room). Do not pile them up together or they may heat and even char. Each body is provided in the dissecting room with such a waterproof sheet, eight feet long by six feet broad, and each student must have his part wrapped in a suitable piece of calico similarly prepared. The sheets and small wrappers do several seasons.

Fluid for Preserving Tank.—Fill the tank with water to the desired depth; measure and calculate the number of cubic feet of water your tank contains, and to every cubic foot of water add three ounces of corrosive sublimate, four ounces of alum, and ninety ounces of common salt, the first and second in fine powder. Toward the middle of the session it may be necessary to add, say, a tenth of the whole quantity of corrosive sublimate.

One cubic foot of water is rather over six imperial gallons.

A jar of the same fluid, without the alum, should be kept in the dissecting room for students to dip the cloths in with which their parts are protected.

Original Communications.

THE TECHNIQUE AND INDICATIONS OF VAGINO-FIXATION (MACKENROD'S OPERATION).

By HIRAM N. VINEBERG, M. D.

OF THE NEW YORK POLYCLINICAL MEDICAL SCHOOL AND HOSPITAL,
AND EDITOR OF THE NEW YORK POLYCLINICAL MEDICAL JOURNAL, AND
OF THE NEW YORK POLYCLINICAL MEDICAL JOURNAL.

The number of inquiries elicited by a description of a knife and sound* used in vagino-fixation regarding the technique and indications of the operation has induced the writer to offer the present article to the profession. A further inducement he finds in the circumstance that no full description of the operation has been published in this country, excepting one by the author in a special journal,† which, of course, is at the command of a limited number. In order to more accurately comprehend the steps of the operation, it is well to bear in mind the anatomy of the parts

* N. Y. M. J., vol. 1, p. 1, April, 1894.

† N. Y. M. J., vol. 1, p. 1, January, 1894.

two stitches being made to catch up the cervical tissue to avoid any pocketing. A couple of interrupted sutures may be passed to strengthen the line of coaptation, particularly if any tension exists (Fig. 6). Should there be a

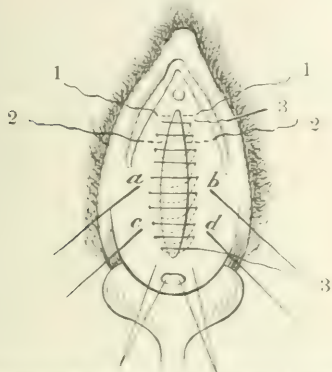


FIG. 6. Method after Depresser. 1, 2, upper and lower vaginal walls; 3, perineal area; a, b, c, d, internal structures.

prolapse of the posterior vaginal wall or a laceration of the perineum, this is now attended to. The vagina is packed lightly with iodoform gauze and the patient put to bed. She is kept in bed for three weeks, the uterine sutures being removed at the end of the fifth or sixth week.

For the first few days the patient has to be catheterized. The duration of time during which catheterization has to be employed has varied in my cases from a few hours to five or six days. In the majority of cases the patients have been able to void urine after the first movement of the bowels, from twenty-four to thirty-six hours after the operation. The operation is a perfectly safe one. Its mortality thus far is *nil*. This statement is based on two hundred and twenty-four recorded cases, including the writer's seventeen cases (fourteen of his own and three in which he assisted).

Most of my patients were operated on in the poorest class of tenements, and amid dirty and squalid surroundings. The temperature, with only one exception, never went above 100°, and the convalescence in all was untroubled. In some of these cases an amputation of the cervix, an hysterectomy, and a perineorrhaphy were done in one sitting. Even when the results of the operation were not satisfactory, no untoward after effects have been observed. The operation was not always successful when adhesions were present. But of this later on.

The theoretical objection raised in some quarters against the possibility of a total fixation is completely answered by experience. In none of my cases have we had any retroversion of the uterus. The retroverted uterus immediately following the operation would not be considered such by any the most careful critic. On the contrary, it is the mobility of my cases that has been frequent and painful observation, which disappeared after the operation. From experience I believe that should any retroversion

The indications for the operation coincide closely with those of Alexander's operation or shortening of the round ligaments. What these are for the latter have recently been defined by two of the most skillful operators and two of its ablest and warmest advocates.

Mundé* says: "Only a sharply retroverted or retroflexed uterus, with more or less descensus, with more or less relaxed vaginal walls, with perfect mobility of the uterus and annexa, justifies Alexander's operation." In a discussion at the last meeting of the American Gynecological Society Edebohls demanded the existence of the following conditions for the success of the operation of shortening the round ligaments: "When the uterus can easily be put into normal position and will stay there, and the tubes and ovaries can be felt to be normal in size."† The indications for vagino-fixation, however, do not call for quite so closely drawn lines. The writer and others have obtained success with it when these conditions did not obtain. In some of my successful cases there was some thickening of one tube, and moderate enlargement of one or both ovaries. To be sure, the uterus must be perfectly mobile, or rendered so by a prior course of tamponing or pelvic massage. But I would put the same limitation on the term "perfectly mobile" that Edebohls does. The uterus must be easily anteverted, and must remain in anteversion until the woman begins to walk about.

It may be asked, if there is enlargement of an ovary or some thickening of a tube, why not perform ovariectomy and ventro-fixation? The answer will be that each case must be analyzed for itself, and that every thickened tube and enlarged ovary does not require a radical operation. Polk and others have taught us what a curettage with or without packing of the uterus can do for the cure of many cases of moderate salpingo-oophoritis. Is a cure, then, not more likely to ensue upon a curettage plus an operation that remedies a retroverted or retroflexed uterus? Of course, if one or other of the tubes and ovaries is diseased to the extent beyond the hope of cure by a curettage and reposition of the displaced uterus, then ovariectomy and ventro-fixation are indicated.

It may be further pertinently asked, given the aforesaid conditions—a "perfectly mobile uterus," with slight or no disease of the annexa—is operative interference at all necessary? In a great many instances it is not. But every active gynecologist and practitioner will meet in the course of a year a fairly large number of cases in which a pessary can not be worn, either on account of the discomfort or temporary discharge it causes, or because the pessary is unable to hold the uterus in its normal position and does it (inverted and twisted). Again, there are some cases of retroverted and retroflexed uterus in which it is impossible to put by a pessary. I am aware there are some gynecologists who will take issue with this statement, and who will maintain that failure to do so leads to their being regarded as being ill-informed. They say for this and for all other pelvic affections, however, the number of operations

* *Gynecology*, December, 1893, p. 1, 1894.

† *Am. J. Gynec. & Obstetrics*, September, 1894, p. 444.

who have the necessary skill. Further, in a number of cases, some condition or conditions other than the malposition exist requiring surgical interference, such as an obstinate endometritis, a laceration of the cervix or perineum, or a cystocele and proctocele. Having to anesthetize the patient any way, she may as well be submitted to the twenty or twenty-five minutes' further operative interference in order to do away with the need of wearing a pessary for months or years, or for the remainder of life.

It has already been stated that the indications for vagino-fixation and Alexander's operation are similar, the wider boundaries being in favor of vagino-fixation. This operation may then be considered in the light of a friendly rival to shortening of the round ligaments. Further experience will teach us which cases are more suitable for the one or other operation. I do not belong to the class of men who decry Alexander's operation.

When such able and conscientious observers as Mundé, Edebohl, and Cleveland allege good results with it, I am content that the operation has a field of usefulness. But it is conceded by its advocates that it is a difficult operation to perform, that the round ligaments are sometimes difficult to find, that they are at times very thin, and that they may be so destroyed by fatty degenerations as to break in pulling the uterus forward.

Vagino-fixation fixes the uterus in a position corresponding more closely to the normal than do either shortening of the round ligaments or ventro-fixation.

Clinically, what is the normal position of the uterus? No better authority on this subject can be quoted than Professor B. S. Schultze, of Jena, whose labors in this field have established our present views regarding the normal and abnormal positions of the uterus. He says: * "Chiari, Braun, and Späth say in their *Klinik der Geburtshilfe und Gynäkologie*, 1855, p. 375: 'The position of the virgin uterus is such that the body is joined to the cervix at an obtuse angle, opening downward and forward so that on an internal examination one can feel a large part of the anterior surface of the uterus through the anterior vaginal

Further, when a mobile retroverted uterus is replaced, it falls into this position just as a dislocated joint falls into normal relations when reduced. Further still, during the first few weeks of gestation in a healthy and normally placed uterus, the antero-posterior enlargement of the uterus will give rise to a distinct bulging in the anterior vaginal fornix. Now, the position of the uterus, after a properly performed vagino-fixation, conforms closely to that just described as normal: "a large part of the anterior surface of the uterus" can be felt on internal examination through the anterior vaginal *cul-de-sac* (Fig. 7).



Fig. 7. Position of the uterus. The shaded area at the fundus *a* represents the normal position of the uterus. Modified after a Dührssen.

The results were good—that is, the uterus remained in anteversion and the patient was freed from her former symptoms—in all the cases (nine in number) in which the aforesaid conditions obtained. In other words, in suitable cases the cures were one hundred per cent. In one case of complete procidentia I was unable to complete the operation, owing to extensive adhesions between the uterus and bladder. In the remaining seven cases, in which adhesions to a greater or lesser extent existed, a symptomatic cure was obtained in some. In others the failure was complete, the uterus returning to its faulty position and the former symptoms recurring shortly after the patient left her bed. These, however, as well as the successful cases, will be discussed more in detail on another occasion. The first case of complete procidentia was operated on October 4, 1893, nearly a year ago. The last case was done four months ago. One of the patients operated on November 6, 1895, was discussed at the New York Obstetrical Society on April 17, 1896. Dr. F. H. Greenhalgh (reported by the chair to examine the patient) reported that he found the uterus in normal position on the perineum fixed anteriorly to the clitoris in the anterior fornix. The woman had told him

that she now had no pain, although previously she had had some symptoms referable to the uterus, such as backache and dragging pain; in other words, the operation seemed to have a field of utility contrary to his previously formed opinion. He would like to see the case after a longer period had elapsed, because he thought it very problematical that the operation would give permanent results. (*Transactions of the New York Obstetrical Society; the New York Journal of Gynecology and Obstetrics*, June, 1894).

The patient has been under my observation ever since. The uterus is in the same position as above described and she is free from all symptoms. There can be little doubt as to the permanency of the results. When the uterus retains its forward position for over nine months, in all likelihood it will remain so for ever. It has been the experience of the writer and others that when relapses occur they usually take place either shortly after the patient is up and begins to go about or during the first few months.

Pregnancy has taken place in several cases in which vagino-fixation had been done. Gestation progressed normally and the uterus was found in anteversion several months after labor at full term (Dührssen, Mackenrodt). As far as I am aware conception has taken place only in one of the cases operated upon by me. The gestation in this instance is thus far of only a few weeks' duration, but the woman is anxious to procure an abortion, in which evil intent she will no doubt succeed.

The following conclusions seem warranted:

1. Vagino-fixation is a safe operation.
2. It is not particularly difficult to perform.
3. The only special instrument required is a uterine sound of the proper shape and size.
4. The operation is indicated in mobile retroversions or retroflexions of the uterus that are attended with symptoms and which for one reason or another are unsuited for treatment by pessaries or tampons.
5. It is not attended with any untoward sequelæ.
6. It fixes the uterus in a position closely resembling that of the normal.
7. The results of the operation interfere in no way with the occurrence or course of gestation.

NOTE.—Since writing the foregoing I have performed the operation in three further cases with complete results thus far. In the first case operated on four weeks ago I modified the method of suturing the uterus with the object of increasing the period of the menstrual painless from three weeks to ten or fourteen days. It is too early as yet to speak of definite results. Should this method prove successful as it promises, the aim will be not only to increase but also to prolong the extension of the painless period of the operation.

(17 East Broadway, New York.)

Doctors Servants.—One of the so-called "salute de Paris" of the present medical era, Dr. Nathan, is represented in a recent issue of the *Lancet*. They compare their country to the gallant Spaniards of olden days, they are given to a press. ONE OF OURS, then, performs various feats of heroism, which seemed to be those of a Frenchman. There is no possibility of a mistake in this part of a doctor's account, we think, in Nathan, as the expression is required to be put in French even from their point of view. *Lancet*.

TYPHLEENTERITIS VERSUS APPENDICITIS.*

By JOHN W. S. GOULEY, M. D.,

SURGEON TO RELIEVE HOSPITAL.

THE frequency and grave consequences of inflammatory action in the region of the human blind intestine; the well-known high percentage of mortality, up to a score of years ago, from secondary peritonitis and septicæmia due to perforation of the intestine; and the modern surgical procedures employed for the relief of sufferers from this ailment, have attracted general attention to questions relating to its nature, diagnosis, and treatment. It is not uncommon for laymen to ask, "What is this disease now called appendicitis?" The answer, that it is an "inflammation of a part of the bowels," does not always satisfy the inquirer. If he happens to be a scholar, he is naturally disappointed with such a meager answer to his categorical question, and can not accept the amphigorical term "appendicitis," which conveys to his mind the idea of inflammation of any appendage in or out of the human body. When asked what may be his diagnosis in a case of the kind now under discussion, if, instead of replying, in a discordant medley of Latin and Greek, "appendicitis," the physician were to say, in plain English, "blind-gut inflammation," he would be clearly understood by the learned and by the unlearned. Even the most ignorant rustic knows something of the blind gut in animals, and is ready to believe that it exists in man. The probable reasons why this part of the intestinal canal is improperly named *appendix cæci vermiformis*, and its inflammation "appendicitis," will appear in the following notes.

The word "appendicitis," coined a few years ago, to express the idea of inflammation of the blind intestine, surely fails to convey the intended idea. This inaccurate and hybrid term has evidently arisen from a faulty designation of the first portion of the large intestine. Vesalius is made responsible for the introduction of the term *appendix cæci vermiformis*; but his language has seemingly been misinterpreted, as may be inferred from his words quoted by Hyrtl, who shows that this great anatomist regarded the part now named vermiform appendage as the true *intestinum cæcum*, and that he called *cæcum* only the part now known as the *intestinum cæcum*.

The three following paragraphs, abstracted from Professor Hyrtl's *Onomatologia anatomica*, published in the year 1880, are intended as vouchers for what has just been said of the *cæcum* and of the true *intestinum cæcum*.

"The beginning of the large intestine was called by the Greeks *κόλινος* *côlinos*. B. Gægle and O. Gægle had been connected friends of mine, and would not have named the first portion of the large intestine in English *cæcum*, *intestinum cæcum*, 'blind intestine,' for, in man, this is so diminutive that it has not to be called an appendix, particularly the intestine. It is only in the case of some animals, mammals, that the additional vermiform appendix is so named by anatomists here, but Gægle is concerned in the *intestinum*

* Read before the New York State Medical Association, December 2, 1894.

designate inflammation of the *caput coli* and "*appendix caeci*."

The term typhlo-enteritis seems to be inadmissible, because it can be construed as blind inflammation of the intestine. The idea sought to be expressed is not that of the -itis of typhlon, but of typhlenteron—that is to say, blind-intestine inflammation. Hence it is that some writers expunged the hyphen and made the continuous word typhloenteritis, which, however, is open to several objections, among which are: (1) It contains too many syllables; (2) it is not euphonic; and (3) it is not in accord with the canons of word-building.

By a slight modification of the term typhloenteritis it seems as if the idea of inflammation of the true blind-intestine might be briefly and clearly expressed. This modification may be effected by eliding the o of typhl[en]teritis and uniting the two members needed to form the single word typhlenteritis, which contains precisely the same number of syllables as "appendicitis."

The contraction from typhlon enteron to typhlenteron, as denoting a concrete substance, is not strictly correct, because, as a general rule, an adjective should not be combined with the noun which it qualifies. Such a contraction is, however, regarded by high authorities in philology as allowable in technical terms for the sake of brevity and euphony, and seems to have been sanctioned by Aristotle and other Greek writers on science, in whose works similar contractions appear. This contraction being allowable, it follows that the contraction from typhloenteritis to typhlenteritis is also allowable. There is a great difference between such a contraction and the elision of a whole word, as in "*meatitis*" and "*typhlitis*."

It is therefore hoped that the anatomists will agree to adhere to the old term *caput coli* instead of "*cæcum*," and call the "*appendix caeci vermiformis*" by the name typhlenteron, *intestinum caecum*; that the nosologists will substitute typhlenteritis for "appendicitis"; and that the surgeons will adopt the term typhlenterostomy, excision of the blind intestine, instead of "excision of the vermiform appendage of the cæcum."

SIMPLICITY

IN THE TREATMENT OF FRACTURES.*

By C. B. LYMAN, M.D.

LECTURE COURSE ON FRACTURES AND DISLOCATIONS
IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF CHICAGO
DURING THE WINTER TERM, 1893-4.
PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS.

It is with hesitancy that I presume to suggest your time and attention to the discussion of a subject which may seem so commonplace in these days, when the surgeon's pen is expected to know forth something double-edged, something in the shape of some new and hazardous discovery or disease or operation. I trust that you will be kindly indulgent with me for a few moments while I express my views upon the subject of simplicity in the treatment of fractures.

That there is need of attention to simplicity I am convinced by a casual perusal of any of the ordinary text-books on fractures which are placed before the student and practitioner, replete, even at this enlightened age, with descriptions of complicated appliances for the treatment of the various fractures to which our frames are subject.

These are the days when the surgeon desires glory and immortalization through the discovery of some new operation or of some new means whereby he may successfully and brilliantly do some of the older operations; to be the first or second to do some delicate operation, in which the wavering of a hair's breadth in the knife or the entrance of a single micro-organism to the seat of operation might overthrow his cherished plans and the victim be thereby sacrificed upon the altar of scientific investigation—an inch-and-a-half incision and a ten-minute operation.

Others are perhaps endeavoring to devise instruments of original design to do a certain operation which, perhaps, has been done a hundred times and as well with a common scalpel and a pair of scissors. How many of this kind can you enumerate that have been discarded as being too complicated to be practical; how many have been lost to sight and memory that bear the names of eminent men and teachers! Do not set me down, please, as a fanatic, or as one who in the least depreciates the efforts at advancement, for this is an age of progress, and those of us who desire to be anything must be up to the spirit of the times.

Labor-saving devices have revolutionized the mechanical world, but the surgical art is one where the human hand is and ever will be the active agent. Labor-saving devices in our line are not among the probabilities; we are like the artist who with pencil and brush can bring out on the canvas that which will win the admiration of the whole world. The true mechanic is the one who can accomplish the most and the best results, if required to do so, with the smallest number of tools; so is it with the surgeon.

The treatment of fractures is a subject to which often too little attention is devoted; it is a branch of surgery where the surgeon's results must ever remain as a monument or reproach to his skill, a living accusation of ignorance which almost amounts to crime. The grave seldom yawns to mercifully cover up his mistakes. Surgical shock does not often step in to cover up a crooked leg or an ankylosed elbow; rebellious micro-organisms are never responsible for a deformed hip. For whatever mistakes there are the surgeon himself is responsible. With that thought in mind, should we not then, since there is to be no gain, even though it does seem trivial and a reminder of our student days?

The surgeon of the world necessarily treats fractures in accordance with the best of his knowledge and his sense of what is justifiably reasonable. That he may, if need be, make a sport with a pocket-knife and a stick, and a man of good judgment that he may know just what is needed for each particular case, both he and his patient are entitled to know in the way of treatment. So I believe that some cases may not really need the best treatment, but because the doctor has feeling enough of his surgical power, about the treatment of fractures, or he would at least, the

mains simplicity of apparatus; the unfortunate individual who is your patient will bless you if you can treat him without much complicated paraphernalia. It seemed to be the fashion formerly for every surgeon to devise a splint with some little peculiarity that he might have his name handed down to posterity. How many of them are in use to-day? More than good judgment will sanction; and how many of them, I would ask, will accomplish the objects which are expected of them? A young surgeon who has never had much experience in handling these cases must, of course, be guided by the teachings of others and by his readings; and in his teachings too often he has been told that Sir B——'s or Dr. J——'s splint should always be used in the treatment of a Colles's fracture, and so on *ad infinitum*. Every surgical-instrument dealer will display to you his stock of patent splints, beautifully molded on a dummy, highly polished, perforated, grooved here and there to protect projecting bones from pressure, elevations here and there to press in between parallel bones—all of which to the novice looks plausible, and he says to himself: "I have found just the splint that I want for my case, and how fortunate I am!" As for myself, I abhor ready-made splints; they are like hand-me-down clothes; they seldom fit anybody except the dummy they were made on; very few of them are worth the cost of the material used in their construction. I well remember visiting an old surgeon's office when a boy and looking with eyes wide open, through glass doors, at his beautiful collection of splints, and I thought that he must surely be a very great surgeon; those same beautiful splints at a later day became mine and were forthwith consigned to the wood pile, with the exception of a few which I retained to show the members of my class that I might impress upon their minds their worthlessness.

It has been my lot to be called upon to treat almost every variety of fracture to which the human frame is subject, and with the armamentarium which you see before you I feel that I am fully prepared to handle any fracture that may come along, barring, of course, those which require operative treatment. This kit of tools is simplicity itself, very unlike the set which I saw in the old-time doctor's office. But to return to the kit, as I say, I have everything here which I desire, and I have purchased them at a cost of a trifle over four dollars. I feel, too, that I can handle my cases with less trouble, get better results, and give my patients better satisfaction than with the old-fashioned contrivances in the most fashioned, more elegant and complicated apparatus.

The important thing to bear in mind is that no two cases are exactly alike; that an apparatus, no matter how simple, may not do what is best for the case; therefore the surgeon should be wise, brave, and be able to construct his own apparatus for each particular case, and not necessarily from all one set of rules. Professor Stewart has said: "What the surgeon should make of his splint is not the question." The surgeon should design his splint as he would a splint for a patient.

We should always have in mind the three great principles which govern the treatment of fractures:

1. Make an accurate diagnosis, if you can do so without doing damage to the parts already injured.
2. Restore the fragments to their normal position.
3. Apply such an apparatus as will keep them there and immobilize them.

How much more satisfactory would be our results if we would always keep these three points before us! There are also three things which I would impress upon your minds by my remarks, and they are these:

1. That the treatment of fractures is not as difficult a proposition as it sometimes seems.
2. That you should not treat fractures by any set rule other than the rule which says that you must keep the fragments in their natural position and thoroughly immobilize them.
3. That simplicity in apparatus will give you better results with the least amount of trouble.

1. Most surgeons upon their advent into the arena of actual practice are possessed with the erroneous idea that fractures are very difficult things to treat. I have seen surgeons make as much preparation for fixing up a simple fracture of the lower leg as some would do for their laparotomy. That sort of thing undoubtedly inspires the ignorant with awe and respect and enables the surgeon to charge large fees for his services, and might possibly serve as an advertisement for him, but such base methods should be beneath the dignity of him who relies upon his skill for his success. Confidence is what is needed, and that, of course, comes only with experience. In this enlightened age of ours the treatment even of compound fractures is not such a difficult thing with the proper understanding of aseptic methods, for we should be able to convert a large proportion of our compound fractures into simple fractures and treat them as such.

2. We should have no set rule for treating our fractures. We should make the rule fit the case and not the case the rule. I have seen surgeons work conscientiously for a considerable time to make a certain splint fit a case of Colles's fracture when the fact was that it was not the splint at all for that case; the surgeon did not fully understand the anatomy of the parts, but felt that he must make that case fit this particular splint. I have also seen a surgeon apply a roller plaster-of-Paris bandage to a fractured leg, take it off, and reapply it in his earnest endeavor to make it fit when it would not do so, and when another kind of dressing would have served the purpose perfectly; but he was not enough of a mechanic to see it. The surgeon should study each case of fracture, its nature, the direction of the line, and the direction of the displacement, before saying what kind of an apparatus should be put on. He should study to put on an apparatus which will be light and of sufficient strength (and right here let me say that the tendency is to put too heavy splints on fractures), and which should be as comfortable to the patient as possible. Splints which fit the parts accurately are the most comfortable, and therefore splints which can be molded to the parts are the most serviceable. Heavy wooden or metallic splints are not needed. When I use wooden splints I do not have them over an eighth of an inch thick, and metallic splints

I seldom use. To my way of thinking, splints which can be molded are the most serviceable, and I carry two materials which can serve that purpose—one, binder's board in strips, which, when soaked in water, become perfectly pliable, and can be molded to almost any surface; and the other is plaster of Paris, which, when made into a thick paste and incorporated into several layers of bleached butter cloth and folded into proper shape, makes a splint which can be made to fit any surface of the body, and when it becomes hard it will accurately support the parts and keep them perfectly immobilized. It is light, clean, and of good appearance. I have used this splint in almost every case of fracture of the leg below the knee and of the arm in the last three years, and I give it my unqualified approval. These splints can be made to fit any angle, as, for instance, at the elbow, and can be carried up over the shoulder in the form of a shoulder-cap in cases of fracture about that joint. They are to be held in place by means of an ordinary roller bandage, and in that way the seat of fracture can always be inspected without any difficulty.

3. I have already transgressed a little on this division of my subject—namely, that the simpler the apparatus is which will accomplish the results, the better will be the ultimate outcome of the case—when I spoke of the use of plaster-of-Paris splints. I have already said that the surgeon's paraphernalia for the treatment of fractures need not be expensive or extensive. You may now ask, What have you in your kit? Well, here is the list:

Two yards of bleached butter cloth; one dozen safety pins; two strips of wood four inches wide, a quarter of an inch thick, and thirty inches long; one roll of adhesive plaster three inches wide; two strips of binder's board; two yards of unbleached muslin; four ounces of dental composition; one foot of silver wire; one dozen plaster-of-Paris bandages; three pounds of dental plaster of Paris; four sheets of cotton wadding; half a dozen assorted bandages; one long patella splint; two empty sand bags; one pulley and cord—which, together with a pocket knife, will enable you to handle any case that may come along, excluding those which will require operative interference. You will notice that in this list there is no Dr. J.—'s splint for Colles's fracture, or Dr. S.—'s splint for Pott's fracture; they are a superfluity, and would add nothing to your convenience or comfort. It is a mistake that our text-books are filled with descriptions of such a large number of complicated contrivances; the reader is at a loss to know which is the best, or may conclude that it is simply a matter of taste.

It is not my intention to detain you when I give you a detailed description of the methods of treatment of all of the fractures of the body, but I would like to mention a few to illustrate what I have been saying, and to impress upon your minds the truth of my statements:

(a) Fracture of the middle arm of the humerus (very easy case). For the treatment of these fractures it is very simple: take a piece of adhesive plaster eight inches wide and eight feet long, and, when properly applied in a series of short bands, of the same size can be more effective in being comfortable to the patient. I have treated one

cases of this injury by this method, and have had better results than when treating them by other methods. You can probably all recall and are familiar with at least a dozen different methods of treatment for this particular injury, and in many of them it would seem that the sole object was to make them as complicated as possible. I well remember a case which came to me from another town with an apparatus on which probably cost the doctor at least fifteen dollars, and which consisted of a bellyband of leather with a pocket on one side into which fitted an upright steel rod, adjustable in length by means of a screw arrangement; at the upper end was a crutch which fitted into the axilla. The only thing which this apparatus could accomplish was to elevate the shoulder, and this could have been done just as effectively and much more easily by means of a piece of unbleached muslin costing only two cents, and which would have at the same time accomplished all of the other things desired—namely, to draw the shoulder backward and outward.

(b) Fracture of the phalanges: You will find in the market a number of patent splints for the treatment of this fracture. All that is necessary in these cases is to keep the fragments in line both in an antero-posterior position as well as in a lateral, and not to allow the finger to become rotated on its axis. A small, narrow piece of binder's board or a plaster-of-Paris splint is all that is needed, and sometimes even this is not necessary, for simply bandaging the injured finger to those on either side will serve the purpose. In other cases you can take the finger of an old glove, draw it over the injured finger, and stiffen it with glue or varnish painted on the outside.

(c) Colles's fracture: Here is a place where we have an infinite variety of splints. In looking over one of the modern text-books I find no less than twelve different splints pictured for the treatment of this fracture, many of them, too, bearing such distinguished names as Nélaton, Bond, Smith, Hewitt, Dupuytren, Levis, Hamilton, and Bolles, and it is my experience after treating a large number of these cases that none of them accomplish the objects desired better than two straight pieces of board properly padded, or two plaster-of-Paris splints, neither of which will cost over five cents.

(d) Suppose now that we have a fracture (first and second elbow joint) and it becomes necessary to put the arm up in an angular position, why should the surgeon carry around with him a large supply of angular splints of assorted sizes when with a yard of butter cloth and a pound of plaster of Paris he can make an apparatus which will fit any case and which will perfectly immobilize the joint and be more comfortable than any of the really made splints? The method I have used in a number of cases of all ages with great satisfaction to all concerned.

(e) Fracture of both bones of the lower leg is a very easy case, and can be treated very simply. Take one yard of strip, and very judiciously round the corners of the pieces of Paris plaster, some straight treatment putting on a temporary dressing for a few days and then making the leg in a corner splint. These findings. If there is any need of treatment, I

would certainly apply the temporary dressing first. It has been my habit to combine the temporary and permanent dressings in one, both in my treatment of simple and compound fractures of the leg, in the shape of a plaster-of-Paris splint long enough to reach from the knee down the leg, underneath the foot, and up on the opposite side of the leg to the knee again, which is to be held in place by means of an ordinary roller bandage. This can be applied to the leg at any time irrespective of the presence or absence of swelling, for as the swelling subsides the outside roller bandage can be slit up and a new one put on tighter than the first without disturbing either the splint or the fragments. It fits every irregularity of the surface; keeps the fragments perfectly immobilized; it does not allow of any motion in the ankle joint and will thereby prevent much ankylosis of that joint; the seat of fracture can be inspected at any time by simply slitting up a few turns of the roller bandage at that point; it is very light, sufficiently strong, decidedly comfortable, and sufficiently cheap for any one. I have used this dressing in upward of forty cases, both simple and compound, and it has always given me perfect satisfaction. If the fracture be near the knee joint this splint can very easily be carried above that joint and thus immobilize it as well as the ankle joint. In compound fractures, after having properly taken care of the wounds, this splint can be applied directly over the dressings, and if it becomes necessary to change the dressings it can be done without disturbing the fragments at all; and how much more simple and comfortable is this than the old-fashioned fracture box, side splints, suspension or extension apparatus!

(f) In fracture of the neck of the femur in old persons, what is more simple than a plaster-of-Paris bandage made to include the pelvis and extending down to below the knee? How much more comfortable is it than the old-fashioned and barbarous apparatus of Desault or Neill!

(g) Fracture of the lower jaw: It has fallen to my lot to treat a number of cases of this kind where the fracture has been either in the body or the ramus. I remember one case which came to me after eight weeks with non-union and necrosis of the edges of the fragments, in which I removed the necrosed portions and secured the fragments by means of an iron wire passed around the teeth on either side of the line of fracture, getting a further purchase on the fragments by passing a fine wire around the other large teeth near the seat of fracture, thus making the larger wire on the inside approach to the teeth, taking up the slack, as it were. The patient never wore any other apparatus than this, and in six weeks was discharged well.

Another case of compound fracture of the lower jaw, in which I have recently treated in this same way, and the patient was discharged in six weeks. In more than thirty cases of fracture of the jaw, and in many of the compound fractures, I have used the iron wire, and in all cases with the most successful results, and in all cases with the least suffering to the patient. I have never yet seen a case of fracture of the jaw in which the iron wire was not used, and in all cases with the most successful results, and in all cases with the least suffering to the patient.

I will not discuss the value of the iron wire in the treatment of fractures of the jaw, but I will state that in all cases of fracture of the jaw, and in all cases of compound fractures, I have used the iron wire, and in all cases with the most successful results, and in all cases with the least suffering to the patient.

tary; but I am a firm believer in the virtue of simplicity in all surgical procedures, and if I have impressed upon any mind here the necessity and value of simplicity in the dressing for fractures, and the fact that with a proper anatomical knowledge and a proper amount of mechanical skill the treatment of fractures is not the difficult task that many would have us believe, I shall feel that my paper has been of some service.

CALIFORNIA BUILDING.

ON THE CLINICAL VALUE OF THE CENTRIFUGE.*

By HENRY L. ELSNER, M.D.,

PROFESSOR OF THEORY AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE,
SYRACUSE MEDICAL COLLEGE.

WITH THE COLLABORATION OF

HIRAM B. HAWLEY, M.D.,

DEMONSTRATOR OF ANATOMY, SYRACUSE MEDICAL COLLEGE.

THE application of centrifugal force to clinical medicine is of recent date. This fact, with a literature on the centrifuge still very meager, seems sufficient justification for a few prefatory remarks, in which we may be permitted to review in a cursory manner the references which have come to our notice while investigating this subject. In 1891, Stenbeck (1), of Stockholm, a medical student, first described the use of the centrifuge for the precipitation or sediments from urine, sputum, and other pathological fluids. His experience seemed to demonstrate the fact that the instrument which he described would soon prove to be an important adjunct for the speedy and ready examination of urinary and other deposits. At the Congress for Internal Medicine, held in 1891, Litten (2) read a paper on the clinical use of the centrifuge, in which he called the attention of the congress to the instrument, and made a very strong argument in favor of its use. He held that the advantages of this method of filtration and sedimentation were a great saving of time, the prevention of fermentation and bacterial contamination, while the late precipitation of crystals in an easily changed urine was excluded. In many of his cases he found in a perfectly clear urine a red precipitate composed of red blood-corpuscles, as shown by the microscope, in which none could be obtained without the instrument. He was the first to demonstrate the ease with which casts, tubercle bacilli, and other micro-organisms were sedimented by the centrifuge in urines, which without it gave but feeble or negative evidence of their presence. He discovered the fact by the aid of the centrifuge that all serous exudates of whatever nature, such also as are not cancerous or tuberculous, contained blood, though the Heller test and the spectroscope gave negative results. These statements, coming from such reliable quarters, at once drew the attention of the profession to this new diagnostic aid, and to-day there is not a well-appointed clinic on the continent of Europe in which the centrifuge is not brought into daily use with growing and abundant data to prove its utility.

Jaksch (3) described the positive advantage of the combination of the centrifuge and Biedert's method in cases where he was unable to find bacilli after patient and diligent search. At Jaksch's clinic the centrifuge is being used extensively, as is also the hematokrit in conjunction with it. The next publication, and the only critical review of the centrifuge which we have found, appears in the *Berliner klinische Wochenschrift*, No. 22, 1892, by Albu (4). He gained his material from the clinic of Guttman at the Moabit Hospital. To this paper we will again refer before concluding.

At a meeting of the New York Pathological Society, held September 23, 1891, Dr. G. C. Freeborn (5) made a report On a Method of Rapidly Collecting Deposits for Microscopic Examination, in which he called attention to Litten's report, and himself demonstrated a home-made machine capable of about nine hundred and fifty revolutions per minute. This had answered the purposes for which it was devised admirably, and it is fully described in the *Medical Record* of February 22, 1892. He concluded that "in ordinary urinary analysis not only would this new method enable the microscopical examination to be made about twenty-four hours sooner than formerly, but it would effectually prevent decomposition of casts, which was liable to occur when the urine had to stand for many hours in order that the deposit might settle."

At a meeting of the New York Surgical Society on May 25, 1892, Dr. Gerster (6) "showed an instrument in which he could rapidly deposit the tubercle bacilli of urine or any other fluid on the bottom of the test tube, whence they could be removed with a pipette and examined microscopically in the ordinary way." He had often been able to clear up an obscure urinary trouble in a short time by the examination of the urine in this way.

The next and most complete paper written on this side of the Atlantic, bearing on this subject, was written by Sondern (7) with the title *The Value of the Centrifugal Apparatus for Diagnostic Purposes*. This was written as a result of the author's experience with two hundred different specimens in the laboratory of Professor A. Jacobi, as well as in his own private practice. His results were satisfactory and led much to bring the instrument to the notice of those American practitioners who do not read German medical literature.

Among the more recent work we find the centrifuge mentioned by Eulenborg (8), also in the supplement to the *Reference Handbook of the Medical Sciences* (9).

Musser (10), in his recent work on *Medical Diagnosis*, in a footnote speaks of the practical value of the centrifuge first as a time saving apparatus, as well as of its other advantages, which had also been mentioned by Litten.

Lechartz (11) speaks of the advantages of the centrifuge in precipitating blood from the urine at which time the sediment is obtained which we find in this paper to be the result of a comparative study of over one hundred cases concerned by us during the past three months. In all of which the centrifuged precipitate was compared with the sediment obtained by the other methods. These results are briefly as follows: In about 85 per cent of the

cases of genito-urinary (renal and bladder) tuberculosis, acute and chronic nephritis, interstitial nephritis (both albuminuric and non-albuminuric), pyelitis (both catharrhal and calculous), cancer of the kidney, oxaluria, and the various forms of cystitis.

In the course of our work we have taken pains to study with the microscope the appearances which were presented by the centrifugized sediments of the normal urine. In the majority of these cases there was only the normal bacterial contamination. We found besides bacteria the presence of bladder epithelium, a stray pus corpuscle, few red blood-corpuscles, occasionally a renal epithelial cell, crystals of uric acid, amorphous urates or occasionally oxalate of lime and phosphate, all in fields richer than those found without the centrifuge. In none of our normal cases have we found casts of any description.

Normal urine does not always yield a precipitate with the centrifuge, when the microscopic examination of the last drop left after removing the supernatant fluid showed a similar picture to that presented by the urine which had not been centrifugized, if obtained before fermentation has commenced. In those cases in which bacteria were present the centrifuge precipitated only part of them, the supernatant fluid containing a rich remnant; but the normal bacteria were found by us much more abundant in the centrifugized urine than in the urine examined at a corresponding time without the centrifuge. Albu found that with streptococcus bouillon culture, the precipitate made with the centrifuge was dense, but the fluid above remained cloudy, rich in bacteria, while ultimately it became clear after long standing. He found the same trace of sterilized water to which had been added a clear culture of staphylococci. The bacteria were only partly precipitated.

In many cases of albuminuria which were brought to light by insurance examinations the result has not always been satisfactory, owing to a scant sediment upon standing; in many cases no sediment at all. We have in our experience since commencing the use of the centrifuge made a number of insurance examinations in which the applicant apparently enjoyed perfect health, though a permanent or transitory albuminuria was discovered. We have made it a practice to centrifugalize such urines as soon as the test which revealed the presence of the albumin was made, and while in some cases we have not been rewarded with a sediment sufficient for even microscopic examination, in the majority of cases we have found with great promptness a scant and rich centrifuged fluid. As the result of such treatment a positive diagnosis could be given, while without albuminuria was given its true pathological significance. Only a few of these cases, which with the centrifuge showed positive results gave any idea of the source of the albumin by the other method of examination. In a number of cases of non-albuminuric nephritis which had been under treatment for some time, having the interest which had been especially excited, accompanied with negative results, the centrifuge yielded sufficient epithelium and cast structure to make positive the diagnosis of an interstitial or chronic nephritis.

We have not compared the results obtained in the

urines of primary chronic interstitial nephritis in which there was but a faint trace of albumin and a characteristic low specific gravity, and find in the majority of cases that the centrifuge precipitates a sediment, as a rule scant, holding few hyaline casts, an occasional granular cast, with a few epithelial elements in each microscopic field. This, it appears to us, is a valuable aid in these heretofore puzzling cases and one which we have used with great satisfaction. The examination of the urine of pregnant women, in which there is the occasional presence of albumin, usually faint, without symptoms of renal insufficiency, has yielded positive results; the enormous desquamation of epithelium from the genito urinary tract demonstrated by the centrifuge in these cases is surprising. These urines, as well as many others, readily undergo fermentation; hence it becomes important to gain an early and unchanged sediment. This the centrifuge has given us. The presence or absence of casts or cylindroids has been demonstrated hours before an approximate result was obtained by the usual examination.

In the ordinary form of nephritis, in which the sediment is usually rich, the centrifuge makes it possible to examine before fermentative changes take place. The field obtained is rich in corpuscular and cast elements, while the rapidity with which such sediments are gained becomes an important factor in office consultation. In some of these cases the centrifugized urine gave a microscopic field so crowded with epithelial and cast elements as to prove a disadvantage. This was readily remedied by diluting the precipitate and re-examining with the microscope.

As an example of the clinical value of the centrifuge in this connection allow us to present the following case:

F. F. H., of Canastota, telegraph operator, aged twenty-five years, presented on the 1st of May, 1894, with every evidence of what I have called genito-urinary neurasthenia. The complex of symptoms it is not necessary for us to rehearse in order to make clear the point which we wish to emphasize. Suffice it to say that this young man's mind had been turned by the fact that albumin was present in his urine. It is important to remember in conjunction with this history that no objective symptoms could be discovered, save persistent albuminuria. A microscopic examination of the urine without the centrifuge proved negative. No sediment could be gained. The first examination of the centrifugized sediment was also without result. Several slides of the precipitate were prepared, when it was found that with the centrifuge there was abundant renal epithelium from the pelvis, kidneys, with slight granular casts, few pus corpuscles, some leukocytes, with some mucus and some small crystals. With the centrifuge the same area of sediment from a few centesimal portions, as per cent. solution, the sedimented sediment. In the case of the centrifuge, the positive result was obtained. But later, through the time had been made, as usual, the compound and painstaking process. The centrifuge is all probability the only method of the centrifuge in the treatment of the centrifuge.

urinary tuberculosis. He understood, as had all clinicians, the great difficulties which beset the early recognition of this disease, and appreciated as well the benefit which must come from a diagnosis during its incipient stage. Those who have had a considerable experience with renal and bladder tuberculosis have frequently been disappointed by the negative results of urine analysis as well as bacteriological study. One of the most difficult problems which the microscopist encounters is to demonstrate tubercle bacilli in the urine of primary urinary tuberculosis at a time when degeneration or disorganization has not yet taken place. Indeed, it is a question whether the tubercle bacilli are present in the urine before there has been breaking down of the cheesy infiltrating masses. Another point which must be taken into consideration is the rapidity with which primary tuberculosis spreads from its original focus in the urinary tract to others, which may or may not be far distant, as from one kidney to another, or from kidney to bladder. In other cases a cheesy focus with or without consecutive disorganization has accompanied, preceded, or quickly followed upon primary vesical or renal tuberculosis.

Morris (14), Thornton (15), and Rosenstein (16), in their works, are agreed upon the primary character of renal tuberculosis in a good number of cases. We can not hope to reach cases of miliary genito-urinary tuberculosis, which almost without exception affects both kidneys at the same time, though not always to an equal degree (Morris (17)), but there can be no doubt that during the early stage of renal or bladder tuberculosis, when the disease is still confined to one organ, much could be done if the physician could appreciate the true condition and could with reasonable certainty point out to the surgeon the seat of this primary focus, for its prompt and safe removal. In such cases the cystoscopic examination will, in conjunction with the centrifuge, prove a valuable aid. In this connection we have had a very interesting and profitable experience since working with the centrifuge.

During many years we had a man, aged seventy years, under observation, who had vague urinary symptoms, none of which were characteristic of any particular disease, while physical examination of the bladder and genitals proved negative. Associating his urinary symptoms with his general condition, we were reasonably certain, after excluding stone and tumor, that we were dealing with a disseminated genito-urinary tuberculosis of an infiltrating and chronic nature. During these years of observation, and before working with the centrifuge, we had made frequent examinations in search of tubercle bacilli. All of these were negative. We found on microscopic examination the presence of pus, bladder epithelium, and occasional red blood-corpuscles, but nothing on staining which justified a bacteriological diagnosis of urinary tuberculosis. The precipitate of the second urine centrifugized was stirred after the Gabbet method, and besides yielding a field rich in corpuscular elements, bladder and renal epithelium, scattered about were tubercle bacilli in small numbers. Not all centrifugized urinary specimens of this patient demonstrated the presence of tubercle bacilli.

but they could be seen in a sufficient number to make the diagnosis certain, and the treatment was indicated thereby. This experience we have repeated in other specimens where methods of staining without the use of the centrifuge have given negative results, while with it we have been able to make a positive diagnosis. As we look over our experience we recall cases which, with our newer methods of precipitation, might have been diagnosed early and which were not recognized until general genito-urinary infection had followed surgical operation, or had already existed unrecognized before the operation was undertaken. In one case seen in consultation, operation was resorted to without a previous positive diagnosis, though the urine had been frequently examined and its sediment stained. At the operation it was found that the kidney was tuberculous; nephrectomy was done, death resulting in the course of a few months, with evidences of disseminated genito-urinary tuberculosis.

That a number of persistent albuminurias which we meet without subjective or objective symptoms sufficient to make a diagnosis certain, often in association with insurance examinations, are due to latent or progressive urinary tuberculosis, there can be no doubt, and we are equally certain that the urine of these patients repeatedly centrifugized will demonstrate the presence of tubercle bacilli. One such case has already come to my notice within the past few months. In considering this subject of genito-urinary tuberculosis I wish to call your attention to the fact that the centrifuge more readily precipitates the tubercle bacillus from fluids than any other of the various micro-organisms.

Scheuclen (18) experimented with bacteria suspended in various fluids, and concluded, after using an apparatus which made from two to four thousand revolutions per minute, that the centrifuge in no way influenced the life or virulence of bacteria; that mobile as well as immovable bacilli are partly precipitated from watery solutions. Centrifugalizing milk proved that most bacteria, including the typhoid and cholera bacilli, remained in the cream; the others were found suspended in the milk, but few precipitating, while the tubercle bacilli proved an exception to this rule; the larger number of these were centrifugized and sank to the bottom, while the remainder, which proved to be a considerable number, were found in the cream. This experiment with the centrifuge, it appears to us, and lead to practical deductions, and is another argument in favor of the strict surveillance of dairies and city milk stations.

We have found the centrifuge of value in making quantitative examinations of urine for albumin. The practical test ordinarily used by the physician is the Esbach test, and requires three or four tests for precipitation. We have represented patients with the proteinuria test, and find after comparing our results with the method in the albuminometer that there is no practical difference, while the albumin is precipitated in the centrifuge in less than ten minutes with double advantage in form of the rapid method as we can possibly demonstrate. The error occurred with an equal quantity of the protein and serum

ordinarily used, in one tube, while in another tube we place a quantity of urine equal to that already mixed with the test solution for the purpose of noting the quantity of sediment centrifugized from it. The object of this control tube can be readily understood if the fact is taken into consideration that with picric acid there is precipitated not only albumin but mucin and peptone, while the larger number of pus elements are centrifugized with the other insoluble constituents present in the urine, all forming part of the precipitate. Therefore, the tube containing the test solution with the urine contains, besides the precipitated serum-albumin, an added precipitate equal to that in the control tube. On many occasions we have repeatedly centrifugized the supernatant urine with the picric-acid diluent to find almost invariably that the precipitate is so slight that it remains a mere haze or there is none at all. The *éprouvette* can be graduated (and this we are now having done), making it possible to read the result of the test, as we now do with the Esbach albuminometer. While writing this paper we examined a urine which on ordinary chemical and microscopic examination gave negative results. The centrifugized urine showed granular casts with broken-down epithelium. This led to a thorough chemical examination with the more delicate picric-acid test after the method of George Johnson, when albumin was found to be present in small quantity. The centrifuge also precipitated the merest cloud with the Esbach fluid. The case proved to be one of secondary contraction following chronic tubal nephritis. The difference in the quantity of precipitate in the two tubes shows the amount of albumin present in the urine.

We have reason to believe as a result of our work with the centrifuge that the rapid precipitation of albumin with picric acid, and its comparison with the sediment obtained in the undiluted urine centrifugized an equal time, has a very decided advantage over the older, slower method, and is more accurate, particularly in cases where there is a catarrhal inflammation of the bladder or other urinary organs, with abundant presence of mucus in the urine, associated with or without nephritis.

We have repeatedly obtained a red precipitate from perfectly clear urine with the centrifuge, which on microscopic examination showed the presence of blood, while with the older method not a single corpuscle was found. In the ordinary cases of hematuria or infectious disease of the genito-urinary tract the centrifuge simply yielded a richer, more crowded field than did the ordinary non-centrifugized sediment. Scheuclen (19) speaks of the application of the centrifuge for the purpose of differentiating hematuria and hemoalbuminuria. In the former, the centrifuge settles the sediment at the bottom, while the latter remains above the side of the sediment as an opaque film. Because of our method comes the latter test is used with negative results, while the centrifuge gives a positive result showing abundant red blood corpuscles. We have had instances of cases of pyelitis in which we were enabled by means of the centrifuge to see the micrococci floating out from the pus in the supernatant of the microscopic field.

We have had very numerous cases with the centri-

fuge in the examination of sputum for tubercle bacilli, pneumococci, and other bacterial and elastic fibers. The first are oftentimes present in such small numbers before advanced pulmonary changes have taken place that it becomes important to precipitate as great a number as possible for staining. For this class of cases Biedert (20) and von Sehlen (21) each recommended a method by which it was sought to dilute the sputum with alkalis, setting the mixture aside for precipitation. The former diluted the sputum with water, then added caustic soda, and boiled the solution until a homogeneous fluid resulted, which he allowed to deposit, this process occupying at least twenty-four hours. In the Sehlen method the sputum is thoroughly mixed with a hot solution of borax and boric acid (twelve and a half per cent. of each), and in four days the sediment is gained for further treatment. If the tuberculous sputum is mixed with either of these fluids the centrifuge will precipitate the bacilli in from five to eight minutes, more completely than by the older methods alone and with a great saving of time, an advantage which we often appreciate. We have experimented with dried sputum, diluting with the von Sehlen solution, and centrifugalizing with very pleasing and positive results. The practical advantage of this method was demonstrated in a recent case which we saw in consultation with Dr. Weidman at Marcellus, where the sputum, all that could be obtained while there, dried on the plate. The diagnosis depended largely on the result of bacteriological examination which we made after the method above described. The attending physician received his report in less than eighteen hours after the consultation. It is not always necessary to dilute the sputum, but in many cases it is of decided advantage.

The element of time plays an important rôle in the examination of serous fluids and other exudates. With pleural effusion there is oftentimes such a rapid coagulation (the micro-organisms being held in the coagulum) that no desirable precipitate can be obtained. Such fluids have yielded characteristic and satisfactory results with the almost immediate use of the centrifuge. In all of our cases of pleural effusion we found with the centrifuge the presence of pneumococci, either of Friedländer or of Friedländer, as well as blood-corpuscles.

In cancerous disease of the urinary tract, particularly the bladder and kidney, the centrifuge has precipitated epithelial elements and characteristic shreds which were not easily found by ordinary sedimentation.

The centrifuge, which is forced upon us after a careful consideration of this subject from a practical point of view are:

That the filtrates given by centrifugalizing urine and other fluids are nearly pure, there are no other elements present (filtrates are not being taken place), each every precipitates showing the epithelial casts and other structures before the centrifuge and sedimentation, without loss of material.

The centrifuge can yield a precipitate in all cases, though in the case of some fluids the precipitate is not so easily obtained as in the case of others.

near the bottom of the *éprouvette* which with care can be gained and oftentimes gives a valuable microscopic picture. In some urines absolutely no precipitation or haze can be found.

3. Centrifugalizing demonstrates, as no other method can, the insoluble and suspended elements present in an abnormal urine.

4. The presence of blood in the urine can often be demonstrated by the aid of the centrifuge when the older method fails to show it.

5. In cases of transitory, cyclic, or permanent albuminuria, without marked subjective or objective symptoms accompanying, the centrifuge will oftentimes aid in establishing the underlying pathologic condition; hence, for the insurance examiner the instrument becomes invaluable.

6. No other method of urinary examination will be as likely to demonstrate primary genito-urinary tuberculosis. The repeated examination of suspected urine is necessary, as failures are frequent and tubercle bacilli are present in small numbers only.

7. The centrifuge precipitates albumin with picric acid in from five to ten minutes, the test being equal in value to Esbach's, having the decided advantage over the latter (which requires fully twenty-four hours) that only a short time is needed, and that the mucin and other insoluble elements can be measured or weighed.

8. The prompt bacteriological examination of serous exudates and other pathologic fluids can be made by the aid of the centrifuge more thoroughly and with greater satisfaction than by any of the older methods, while occasionally tubercle bacilli can be found in sputum with the centrifuge which can not be found without it.

9. In twenty-one per cent. of the cases examined the centrifuge yielded results which led to more accurate diagnoses than could otherwise have been made. Our work with the centrifuge has emphasized the fact that in the examination of urinary sediments "it is important to observe not only the kind and number of casts, but also to consider very cautiously the number and characteristics of all accompanying elements" (Bizzozero (22)). We agree with Albu, who holds that the centrifuge has "unfolded no new diagnostic principles"; we do maintain, however, that by means of it we attain to the very refinement of diagnosis.

Bibliography.

1. Stenbeck. *Hygiea*, Stockholm, 1891, 40-51.
2. Litten. *Deutsche medizinische Wochenschrift*, 1891, No. 25.
3. Jaksch. *Deutsche Wochenschrift*, 1891, No. 18.
4. Albu. *Berliner Klinische Wochenschrift*, 1892, No. 22.
5. Frobenius. *Wiener Rundsch.*, Feb. 7, 1892.
6. Gorter. *New York Medical Journal*, Sept. 10, 1892.
7. Souders. *New York Medical Journal*, Feb. 25, 1893.
8. Eubank. *Proceedings of the American Association of the Medical Sciences*, 1893, 100.
9. Wood's Supplement to the *Reynolds' Handbook of the Medical Sciences*, 1893, 100.
10. M. W. Wood. *Wm. B. Ewing, Lea Brothers & Co.*, Philadelphia, 1893, p. 316.
11. Litten. *Wiener Rundsch.*, Feb. 7, 1892.
12. Jaksch. *Deutsche Wochenschrift*, 1891, No. 18.

12. Albu. *Berliner klinische Wochenschrift*, 1892, No. 22.
13. Litten. *Deutsche medizinische Wochenschrift*, 1891, No. 23.
14. Morris. *Surgical Diseases of the Kidney*. Philadelphia, pp. 473-482.
15. Thornton. *Surgery of the Kidneys* (Harveian Lectures, 1889), p. 46, etc.
16. Rosenstein. *Nierenkrankheiten*. Berlin, 1894, p. 537.
17. Morris. *Surgical Diseases of the Kidney*. Philadelphia, p. 473-482.
18. Scheuerlin. *Arbeiten aus dem k. Gesundheitsrat*. Band VII, S. 255 ff.; *Berliner klinische Wochenschrift*, 1892, p. 831.
19. Sondern. *New York Medical Journal*, Feb. 25, 1890.
20. Biedert. *Berliner klinische Wochenschrift*, 1886, No. 42-43.
21. V. Schlen. *Centralblatt f. Bacterien- und Parasitenkunde*, 1888, Nos. 22 and 23.
22. Bizzozero. *Klinische Mikroskopie*. Erlangen, 1887, p. 287.

516 PROSPECT AVENUE.

A CASE OF FOREIGN BODY (GOLD COIN) ENGAGED IN THE VENTRICLES OF THE LARYNX.*

By A. W. DE ROALDES, M. D.

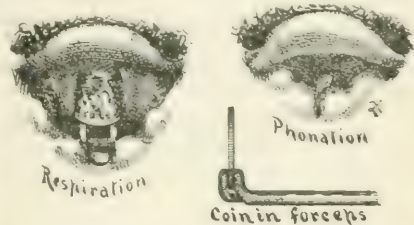
NEW ORLEANS.

SOME months ago, Lester C., aged twenty-five years, a powerfully built man, in good health, but somewhat addicted to alcoholic abuses, was talking with some friends in a farmer's house near Crowley, La. One of the men present produced a \$2.50 gold piece and displayed it somewhat as a curiosity. The patient snatched the coin from the hand of his friend by way of a joke, and, putting it in his mouth, announced that it would be the last seen of the coin, as he was going to swallow it. Something was said in the conversation which excited laughter, and the coin dropped down in the man's larynx. He was immediately seized with intense dyspnea, and very severe cough and gagging. After a while the breathing became easier and the cough abated. Was seen by Dr. Morris, of Crowley, and another physician, who advised his removal to New Orleans; he was brought by his friends to my office thirty hours after the accident.

The voice was simply husky, but otherwise he breathed now quite freely. There is a slight difficulty on swallowing. Upon pressure of the larynx, the patient referred the position of the coin to a spot over the region of the ventricles and vocal cords. The coin was readily detected by the laryngoscopic mirror. Everything was prepared for its extraction and for a possible tracheotomy in case it slipped lower down in the respiratory tract. A five percent. solution of cocaine was then sprayed into the larynx, and with the aid of a heliostat the rays of a bright sunlight were reflected in the larynx, and the parts were successfully drawn by the aid of a hook, and the patient was sent for and kindly consented to come to my office.

As you will see in the accompanying drawing, the coin was much impinged in the larynx between the vocal cords and the ventricular bands, with the surface up and down, extreme hyperemia about completed being the result of the position of the coin. Tremor of the larynx, resulting from being left in position, prevented further the pulling out of the coin by hook and the larynx was not removed at the time of the operation.

space behind (inverted image). The segments of the coin corresponding to the extremities of its equatorial line were protruding into the ventricles and well imbedded under the false vocal bands. These covered a portion of its circumference at each side, leaving exposed a triangular metallic surface, the base of which was formed by the free edge of the coin, while the apex was overhung by the epiglottis.



The coin was solidly fixed, as could be demonstrated by tapping its upper surface with a stout laryngeal probe. When attempting to phonate the vowel A, the arytenoids and processus vocales were seen to approximate. When asked to try and emit forcibly a sound in the upper register, as "I," for instance, the coin was completely surrounded and encircled by the soft parts of the rima glottidis and the patient at once suffocated. This condition is well shown in the drawing. After demonstrating at leisure the case to those present, and having obtained an abolition of the laryngeal reflexes, thanks to the careful cocaineization of the parts by my assistant, Dr. Scheppegrell, I at once introduced, with the help of a laryngeal mirror, a Schröter's forceps with jaws, possessed of an up-and-down power of prehension, the instrument being introduced laterally at first, so that the lower jaw would clear the posterior edge of the coin. The handle was then brought in the middle line, and the jaws of the forceps were then closed by the lever in the handle, and the coin removed.

The resistance offered by the vocal bands was such that, feeling that my hold was slipping, and fearing a repetition of the accident which happened in Dr. Ives's case (swallowing of the coin), or falling of the coin into the trachea, I hastily put aside the mirror, as Grazi did in his observation, and strengthened my hold by additional pressure with my left hand on the handle of the instrument, and jerked out the coin, as it were, from its bed. The patient was discharged the next day in very good condition.

With this experience I can not recommend too highly the use of a strong Schröter's forceps, and advise the operator to lay aside the laryngeal mirror after having grasped the coin, in order to strengthen his hold at the handle with the thumb of the left hand, which might also be used to lift in the trachea, in the course of its descent.

Bibliographical References.

1. Dawson, J. Removal of a coin from the larynx. *Transactions of the R. S. A. Northern Journal of Medicine*, Edinburgh, 1884, vol. II, p. 10.
2. Grazi, G. Removal of a coin from the larynx. *Archiv für Laryngologie, Rhinologie und Halsheilkunde*, 1884, vol. II, p. 10.
3. Adams, A. L. A. Foreign body engaged in the larynx. *The Medical and Surgical History of the Army and Navy*, 1884, vol. II, p. 10.
4. Thompson, J. H., and Wells, J. W. Case in which a coin passed the larynx. *British Medical Journal*, The Standard, London, 1886, vol. II, p. 10.
5. Thompson, J. H., and Wells, J. W. Case in which a coin passed the larynx. *British Medical Journal*, The Standard, London, 1886, vol. II, p. 10.

* Read before the American Laryngological Association at its 18th Annual Meeting, Chicago.

Cameron, J. Case of Removal of a Penny which had been Impacted for Six Years in the Larynx. *Liverpool Medical and Surgical Reports*, 1870, vol. iv, p. 180; reported also by James Petrie in *British Medical Journal*, August 20, 1870, pp. 186-187.

Smith, Henry. Case where Half a Sovereign was Impacted in the Larynx. *British Medical Journal*, 1871, vol. i, p. 7.

Grazzi, Vittorio. Storia della penetrazione nella larynge di una moneta di due centesimi estratta dopo 43 giorni per le vie naturali. *Bollettino delle malattie dell' orecchio, della gola e del naso*, 1882, vol. ii, p. 77.

Ives, Frank L. Two Cases of Foreign Body (Coins) in the Larynx: Removal. *Archives of Laryngology*, New York, 1883, vol. iv, p. 204.

Weir. Removal from the Larynx of a Two-cent Piece and a Penny. *New York Medical Journal*, 1890, vol. ii, p. 243.

A CASE OF EXUDATIVE PHARYNGITIS.*

By WILLIAM C. GLASGOW, M. D.,

ST. LOUIS.

I AM indebted to Dr. E. W. Saunders, the physician in charge, for the history of this case:

Child, aged ten months, very large and robust; previous health perfectly good. After unusual exposure to cold was seized with an otalgia; no fever. After two days the earache ceased, coryza set in, and fever developed. The temperature gradually rose to 104° in the evening, with marked morning remissions. Torrents of mucus were unceasingly poured out from the nares, blistering not only the muco-cutaneous surfaces but even the skin of the neck and hands wherever it touched. The secretion from the fauces was almost as abundant.

There then developed an exudate upon the tonsils, the uvula, the soft palate, and the pharynx; none was visible in the anterior nares. The patches were persistently white, very much elevated, easily detached, and left no ulcerated surface, except on the palate, where it was probably due to mechanical irritation. The larynx could not be seen; but there was aphonia, lasting far into convalescence.

Drugs became so urgent that preparations for intubation were made. Deglutition was so difficult that the child took nothing willingly, and at every effort some fluid was returned, very much as in a case of diphtheritic paralysis.

The lesions upon the skin were very similar to those upon the mucous membranes, only the edges were raised, and upon a somewhat more elevated and projected. There was no emphysema. The bronchial mucous membrane was never involved, neither was that of the stomach and intestines. The nutrition was remarkably preserved, owing to forced feeding with skillful nursing. The resemblance to scarlet fever or diphtheria was not close enough to make the differential diagnosis very difficult at any stage of the case.

For treatment the use of ice, ice-water, and spray freely administered, and under the guidance of hygienic and antiseptic diet, resulted with some success and cleared out the general system. A very few drops of a 1 per cent. solution of iodoform in the nostrils, and a solution of iodoform in glycerine in the throat, were used. It is not probable that the use of iodoform in the throat was of much benefit, but it is probable that it was of some benefit in the nose. The use of iodoform in the nose was of some benefit in the nose.

The child recovered, and was discharged from the hospital. The case was a very unusual one, and the treatment was very successful. The child recovered, and was discharged from the hospital. The case was a very unusual one, and the treatment was very successful.

The whole duration of the case was about three weeks. A bacteriological examination of the secretion showed a large number of streptococci.

I have considered this case to be one of the protean forms of influenza. The points of interest are the mild resemblance it bears to diphtheria and the enormous amount of alkaline discharge, together with the peculiar character of the exudate.

CONTRIBUTION TO THE STUDY OF THE ÆTIOLOGY OF RHEUMATIC AFFECTIONS OF THE BODY

DUE TO TONSILLAR DISEASES.*

By H. L. WAGNER, M. D.,

SAN FRANCISCO.

THE tonsil has been justly termed by Gerhard a physiological wound—an inlet into the system guarded by leucocytes, which we have learned of late protect the body against the invasions of various micro-organisms. If through inherited or acquired predisposition the energy of these leucocytes is diminished, or if the tonsil in a diseased state does not allow these corpuscles to migrate, then a soil may be given for infectious diseases, such as diphtheria, scarlatina, amygdalitis, etc.

The sequences which sometimes follow these diseases are important to observe—paralysis of various parts of the body after diphtheria, and also articular rheumatic affections following follicular amygdalitis. The results gained by clinical studies and bacteriological investigations in follicular amygdalitis, followed by rheumatic affections, are what I particularly desire to refer to.

The question which presents itself is, whether these rheumatic affections are produced by the germs (*Staphylococcus albus et aureus*, Fraenkel's pneumococcus, etc.) migrating from the tonsillar tissues into other portions of the body, causing rheumatism, or whether they remain in or about the tonsils, sending forth and distributing their ptomaines or poisonous products into the system.

The results of my investigations, which I will give you in brief, show in follicular amygdalitis a migration of these germs, proving that rheumatism here is not caused directly by ptomaines.

Clinical observations show that the joints which are mostly in use are the ones generally affected; for instance, the arytenoid cartilages of the larynx of singers (five cases), the knee joints of shoe dealers, owing to the constant kneeling posture (two cases), and the wrist joint of a violinist (one case) and bookkeepers (two cases). Referring to the two cases above mentioned, where rheumatism of the knee joint developed, the bacteriological investigation showed that the germ of the blood stream by tapping of the joint contained the same micro-organisms as were found in the discharges from the tonsils. I was able to identify the same germs in the urine of nearly all the cases. The family and clinical history of all these patients showed no signs of rheumatism before the attack of this tonsillar disease.

Read before the Medical Association of San Francisco, California, at its annual meeting, 1900.

THE
NEW YORK MEDICAL JOURNAL.

A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

EDITED BY
FRANK P. POSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 27, 1894.

THE HYGIENE OF MOUNTAIN-CLIMBING.

THE *Journal des praticiens* for October 6th publishes an abstract of an article from the *Revue du Cercle alpiniste* in which the writer lays down certain rules relative to military hygiene, and applicable also, he says, to tourists in the Alps. At great altitudes, he remarks, not much meat is required, but fat and farinaceous food should form the principal diet: at least two ounces daily of the first, in the form of lard, for each person. Coffee is a very important part of the breakfast, and of the repast at the main halting places. It is a stimulant and a febrifuge; therefore, too much of it can not be distributed. Water is always pure and wholesome in the mountains, but it must not be taken directly from the glaciers, as it is either too cold, non-aerated, or contaminated with organic matter. It should be taken lower down, where it has become purified by dashing over the stones and absorbing air. It has often been said that alcoholic drinks should be avoided, such as cognac, etc., as these liquors give rise to vertigo and profuse perspiration. The truth is, that it is more often the bad quality of these liquors which gives rise to these accidents, and since good brandy can not easily be secured, it is better to abstain entirely from its use. Badly drained and dirty houses should be avoided, and a hayloft or the bare boards of a barn preferred to the ill-conditioned pallet purchased at a costly price. During the night the eyes must be carefully screened, and, whenever it is possible, the clothes entirely removed, as the rest thus obtained is more restorative. In bivouac, sleeping directly on the ground should not be allowed. A march should not be begun without taking food; a piece of bread soaked in hot coffee should be taken, thus avoiding the effects of the early morning cold, and in some cases, rare it is true in the Alps, escaping the deleterious influence of marshy places. Cold milk or wine at this time should not be taken, as they give rise to a feeling of weight in the stomach. It is essential that the men should become accustomed to gradual acclimation at a high level, as the altitude is considered to be a potent factor in the production of mountain sickness.

In accordance, however, with the health advice mentioned in the present article, however dry the day may be, the writer insists on the necessity of the gradual acclimation, and acclimation is considered superior to a rapid ascent, especially in the case of the elderly, and the same is not applied to that. With regard to drinking water while marching, for fear of the coldness will induce the water to be very hot.

lived in the Alps, and no accidents of any kind occasioned by drinking the water have been observed by him. Furthermore, those who have been prevented from drinking have the more easily become victims of sunstroke. A quart of water taken during the march can not cause harm, as it replaces the liquid thrown off by perspiration. While marching, the men may open their jackets, which should be buttoned up when they are resting; lying on the face ought not to be allowed. At the principal halting places the men should have time to change their shirts for dry ones before beginning the march again. The article closes with the familiar reminder that at great altitudes the cold and snow often give rise to an unconquerable desire to sleep, which, however, must not be given way to, as a torpor then takes possession of the entire body and death gradually follows.

ENGLISH APPRECIATION OF OLIVER WENDELL HOLMES.

It is gratifying to observe the extent to which our British brethren appreciate the loss to the medical profession and to that of letters by the death of Oliver Wendell Holmes. The *Lancet* and the *British Medical Journal* publish tender and sympathetic sketches of his character and career. The last-named journal gives an excellent portrait of him, and the editor, Mr. Ernest Hart, contributes a separate article in the shape of reminiscences of the author's personal association with the dead poet for a brief period a little more than a year ago. On the whole, Mr. Hart seems to have understood Dr. Holmes very well, considering the difference of the two men in nationality and personal cast, but we must suppose he was in error in taking Holmes seriously when he called a visiting card a "ticket."

If we claim a portion in the heritage of that part of our common literature that is of British birth—and we are not by any means inclined to waive that claim—we must in all fairness allow that what our own countrymen have contributed to that literature may in like measure be claimed by our kinsmen of the United Kingdom. And this we do not yield grudgingly, but concede most cordially, only too proud to reflect that we have made a creditable beginning of the work of repaying a loan, so to speak. It is as pleasant for us to perceive that our Holmes, Longfellow, Irving, Hawthorne, and Bryant are remembered gratefully on the other side of the Atlantic as to tell ourselves that our forefathers were the compatriots of far-off generations of the great men of the Old World. The accident of birth can not in any degree impair the admiration felt all over the world for men who have done something permanently in the way of literature, and improving the condition of the world. Among such men Holmes is everywhere known to have held a high place; in addition, he was portrayed by the most distinguished personality in his writings—and that with all truthfulness and in all the fullness of his nature. His life and his work are so well known to our people that we need not say more of them. We have only

space left to quote from them adequately in this issue, but next week we shall endeavor to present extracts showing their support.

MINOR PARAGRAPHS.

AN ANTHOTE TO HYDROCYANIC ACID

THE *Lyon médical* for October 4th says that M. Johann Antal, a Hungarian chemist, has discovered a new mineral compound, nitrate of cobalt, which promises to be a very efficacious antidote in cases of poisoning with potassium cyanide or hydrocyanic acid. Tried first on animals, this product has since been employed, always successfully, in more than forty cases of accidental poisoning.

THE REGULATION OF MEDICAL PRACTICE IN MASSACHUSETTS.

We recently published a statement to the effect that Massachusetts was among the States in which there were practically no legal requirements to be complied with before a person was entitled to practice medicine in the State. We are glad to learn that this is no longer the case. It seems that a registration law was approved by the Governor in June of this year.

ITEMS, ETC.

Dead Bodies in the River Seine. The *Lyon médical* for October 2d publishes the following list of dead bodies taken from the river during the year 1893: 5,652 dogs, 3,307 cats, 9,108 rats, 1,720 fowls, 3,942 other birds of various kinds, 4,209 rabbits, 789 pigs, 7 calves, 4 hedgehogs, 33 horses, 15 sheep, 2 colts, 13 monkeys, and 6 snakes, making a total of 28,807. The number of human bodies is not given.

The Medical Society of the County of New York.—At the annual meeting, held on Monday evening, the 22d inst., officers for the ensuing year were elected as follows: President, Dr. Robert H. Greenleaf; vice-presidents, Dr. Wendell C. Phillips and Dr. S. Henry Dessau; secretary, Dr. Charles H. Avery; assistant secretary, Dr. William E. Bullard; treasurer, Dr. John S. Warren; censors, Dr. Seneca D. Powell, Dr. Edward D. Fisher, Dr. George Thomas Jackson, Dr. Charles H. Knight, and Dr. Charles L. Gibson.

The New House of Relief of the Society of the New York Hospital, at the corner of Hudson and Jay Streets, will be open for reception to an invited company, on Friday afternoon, November 1st. This is to take the place of the annual meeting of the New York Hospital, deferred through the action of the Board of Trustees.

Bellevue Hospital.—It is announced that Dr. Lucius C. Aldrich, formerly of the Massachusetts General Hospital, is named the new Dr. William Douglas in the charge of the insane patients.

The New York Cancer Hospital.—Dr. Charles N. Dowd is appointed physician in chief.

Changes of Address.—Dr. George Knowles Swinburne, to New York, 100 West 11th Street; Dr. William C. Wood, to New York, 100 West 11th Street; Dr. William C. Wood, to New York, 100 West 11th Street.

Naval Intelligence.—Official List of Changes in the Medical Corps of the United States Navy for the week ending October 20, 1894:

WARE, ISAAC P., First Lieutenant and Assistant Surgeon. By direction of the Acting Secretary of War, so much of Paragraph 1, S. O. 233, A. G. O., October 4, 1894, as directs him to report to the commanding officer at Camp Eagle Pass, Texas, after his relief from duty at Fort Supply, is so amended as to direct him to report in person to the commanding officer at Fort Clark, Texas, for duty at that post.

Naval Intelligence.—Official List of Changes in the Medical Corps of the United States Navy for the week ending October 20, 1894:

CURTIS, L. W., Passed Assistant Surgeon. Ordered to the Chelsea Hospital, Massachusetts.

CRAWFORD, M. H., Surgeon. Ordered to the U. S. Steamer Constellation.

DICKSON, S. H., Surgeon. Ordered to temporary duty on U. S. Receiving-ship Dale.

GRAVATT, C. U., Surgeon. Detached from the U. S. Receiving-ship Dale and ordered home to await orders.

DEAN, R. C., Medical Director. Detailed as president of the board of medical examiners, Navy Department.

BATES, N. L., Medical Director. Detailed as a member of the board of medical examiners, Navy Department.

BRADLEY, MICHAEL, Medical Director. Detailed as a member of the board of medical examiners, Navy Department.

SCOFIELD, W. K., Medical Director. Detailed as president of the board of medical examiners, League Island, Pa.

Society Meetings for the Coming Week:

TUESDAY, October 30th: Medical Societies of the Counties of Queens (semi-annual—Garden City) and Rockland (semi-annual), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, October 31st: Auburn, N. Y., City Medical Association; Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (Lowell).

THURSDAY, November 1st: New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (annual—Albion), N. Y.; Brooklyn Surgical Society; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, November 2d: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, November 3d: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private), New York; Miller's River, Mass., Medical Society.

Answers to Correspondents:

ANON.—Address Mr. Leonard A. Bidwell, honorary secretary, West London Hospital, Hammersmith Road, W., London.

Letters to the Editor.

MEDICAL JOURNALS AND MEDICAL BOOKS.

NEW YORK, October 15, 1894

To the Editors of the *New York Medical Journal*:

SIR: In your account in your issue of October 6th, on our letter to you published in the same number, we note that you have quoted an understanding on our part to publishers' paying the cost of charges on editorial sent by them to editors. We

made no reference whatever to the comparative expenses, as between publishers and editors, but endeavored to make plain the real issue in the matter as we look at it—viz., that these charges would "amount to a mere pittance to editors in comparison with the cost of books, which would otherwise have to be purchased to meet the just expectations of journalists and others." It appears to us that this quotation from our former letter was hastily read by you.

As to the system in vogue being so thoroughly established that the cost of editorial copies and the expenses incident to them is taken into account in the publishers' contracts with the authors, we do not agree with you. So far as we know, publishers do not go into an estimate on each book they publish as to the details connected with its sales. Contracts with authors are almost invariably made on a uniform basis,

As to it being a greater hardship for the journal to pay the expenses on the books received by it, the question is simply a comparison with the cost of the books, which otherwise it ought to buy for its subscribers' sakes. We do not think there would be any discounting in an editor declining to receive a book, provided always the reason for such action was based upon what is the only proper ground—viz., the editor's judgment as to the value of a review of any particular book to his subscribers. He is and necessarily must be the sole arbiter of such a question as this, and no publisher has any right whatever to take him to task for it. Probably the better way, and one which possibly may eventually come about, would be for publishers to inform journals to which they propose to send their books, of their intention, in advance of sending them, with a request that they be notified if the editor would like to receive them for purposes of review.

What we particularly desire in this matter is primarily to emphasize wholly from the minds of editors, and a few publishers also, the idea that courtesy has any connection with the giving and reviewing of editorial reports, and to emphasize your own statement that it is purely a business transaction. Next, we believe, is stated in ours to you of the 25th ult., that all journals everywhere which profess to keep their subscribers generally informed are in duty bound to review all books published which come to the editor's knowledge, whether presented by the publisher or not, if they be of sufficient interest to their subscribers. This has for some time past been the policy of the *Medical Record* and the *American Journal of Ophthalmology*.

WILLIAM WOOD, JR. (1881-1964)

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION

Notes of the General Meeting held in New York on Tuesday, October 19, 1904, and the following resolutions of the said Meeting.

The President, Dr. Ferguson D. Simpson, in the Chair.

The President's Address urged the importance of a thorough, unprejudiced investigation, particularly in the planning, the process, the funding, the study, monitoring and evaluation of a national programme to take a more active part in the present action of the Committee in what lies ahead.

Foreign Body in the Bladder.—In 1862 a man of Wyoming County, California, in great pain, passed a large stone, which he had removed from his bladder, where it was so lodged as to fasten his urinary canal. The calculus found being exactly equal to the bladder. The specimen was carefully examined.

Traumatic Epilepsy.—Dr. Lusk also reported a case of traumatic epilepsy, with a somewhat peculiar history. The patient was a Syrian, twenty-two years of age, who had been brought to him with fractures of the arm and a stab wound. That evening he had been very much excited, and had had a temperature of 99° F. The next day there had been complete aphasia, with an expressionless face and dribbling of saliva. He had then had convulsions, increasingly severe and frequent up to the tenth day, at which time Dr. Lusk had trephined over the speech center. He had found two fractures of the skull with depression of bone. On removing a button of bone he had found and removed a large, firm epidural clot. On the day preceding the operation the patient had had twenty-eight convulsions; on the day following the operation there had been eight, and the next day four convulsions. After that there had been no more convulsions, and the normal facial expression had returned. On the fourth day he had been able to speak a little. During convalescence it had been noticed that he could talk in our language, but had lost the power of speaking in his own language. The explanation of this was probably that, hearing our language spoken while he was recovering, he was able to speak in it first. The clot had covered the lower part of the fissure of Rolando.

Dr. E. D. FERGUSON, of Rensselaer County, said that we should not count too closely on finding the lesion just where the physiological and anatomical centers were known to be located, for reflex and transmitted influences exerted a powerful modifying influence. In support of this view he reported a case in which, from the symptoms, one would have expected to find the lesion rather high up on the fissure of Rolando, whereas as a matter of fact the operation revealed a large blood clot near the base of the cranium. The patient had made an uninterrupted recovery after the operation.

Dr. DARWIN COLVIN, of Wayne County, reported a case of gunshot wound causing epilepsy, where he had succeeded in relieving the condition by trephining the skull. Such cases ap-

A New Non-conducting Speculum for Post-partum Intra-uterine Douching. Dr. FRED DILLON, of New York County, exhibited such an instrument. It was made of hard rubber, and readily admitted of conducting the irrigating fluid into a sub-peritoneal space, near the fundus of the uterus.

[illegible]

The U. S. Treasury made progress with the 1994 Act and most of the progress in Privatizing U.S. Gov. programs.

present at an operation, not as assistants but as simple spectators, could be made co-defendants and parties to such a suit.

Dr. COLVIN said the drawing up of a contract previous to operation would be no bar to a subsequent suit for malpractice, and that consequently he could see no advantage in entering into such a contract.

Dr. DELPHEY called attention to the fact that the judge in his charge had said that if a physician gave any medicine to a patient contrary to that person's wish, the physician was a trespassor, and could be held as such for any serious results that might ensue from the administration of the medicine.

Interesting Cases from General Practice, Illustrating Special Points of Treatment was the title of a paper by Dr. CHARLES E. LOCKWOOD, of New York County (to be published).

Typhlenteritis versus Appendicitis.—Dr. J. W. S. GORLEY, of New York County, read a paper with this title. (See page 521.)

Some Interesting Cases of Appendicitis.—**DR. JOSEPH D. BRYANT**, of New York County, read a paper with this title in which he described the main features of four cases of recurring appendicitis in which he had successfully operated. They illustrated the varying conditions likely to be met with in these cases at operation, often without any clinical symptoms indicating the severity of the lesions. He said that, whereas formerly the majority of cases of appendicitis to which the surgeon was called had been suppurative, now practice had changed so much that the larger number of such cases were non-suppurative.

Dr. F. W. GOODALL, of Vermont, said that quite recently he had been practicing palpation of the vermiform appendix, according to the method recommended by Dr. Edebohls, of New York, and he had found that it was not difficult to feel the appendix. On making deep pressure the external iliac artery could readily be located, and then by following this vessel outward the appendix was easily detected by the examining finger as a round or flattened band.

Dr. J. G. TRUAX, of New York County, queried whether, if the cases reported in the paper had been properly treated in the primary attack, they would have required operation subsequently. His own experience had led him to believe that with proper treatment of the first attack there would rarely be another attack. What he meant by "proper" treatment was keeping the patient in bed on a milk diet, and with an ice bag over the ileo-caecal region as long as there was any induration of the part. Although the patient was allowed to get up after this, the milk diet should be continued for two or three weeks, and then a farinaceous diet employed for five or six weeks more. When the attacks became quite frequent, it was best to operate in the interval.

Dr. H. O. MAREY, of Boston, cited his last operative case as an example of the many doubtful cases met with. Here, although his friend and consultant, Dr. Shattuck, had almost certainly decided to doubt even the existence of an aneurysm on account of the marked dilatation of the aorta, he had become convinced to operate two days later on account of the development of aortic symptoms. The aneurysm had been completely incised. After the operation, however, the dilatation could hardly be said to have gone but previous to the post-operative period, a week or after, he felt sorry that he had not operated. On the next day, he stated of the results of operative work, "more than the operative has done sufficient work." The final cause was that the aneurysm had already ruptured and he had noticed this fact from the abdominal signs, and only with extraordinary care could he have saved the artery and the patient's life.

Dr. FERGUSON said it was easy to understand how surgeons like Dr. Bryant and Dr. Marey would see such a large proportion of cases demanding immediate operation, and also how, on the other hand, others, like himself, should see so many patients recover without surgical interference. He felt sure that, if all the mild cases were operated on and the statistics honestly collected, there would be quite a percentage of mortality. He saw on an average about twenty cases of well-defined appendicitis each year, and out of this number about four would come to operation. All the patients would get well and the vast majority would remain well.

Dr. BRYANT said that undoubtedly from sixty to eighty per cent. of patients would recover from the primary attack without operation. Secondary attacks occurred in from eleven to seventeen per cent. of the cases. In an ordinary case of primary appendicitis he would wait until such time as the fever indicated the possibility of suppuration before operating—probably thirty-six or forty-eight hours. As one never could tell before the operation whether or not the appendix was dangerously near rupture in a secondary attack, he always advised operation in these cases. He had usually been unable to detect the appendix on palpation, and he considered this method of examination dangerous on account of the liability of causing rupture of a gangrenous appendix.

Recent Studies on Diphtheria and Pseudo-diphtheria.—

Dr. W. H. PARK, of New York County, read a paper with this title. He read the explanatory circular that had been issued by the board of health, and commented on the results of eight thousand cases observed by the board. It had been found that where the membrane was not easily accessible, as in the larynx, the bacteriological diagnosis could not always be made. It had been found that the diphtheria bacilli usually persisted in the throat for at least seven days after the disappearance of the membrane. Virulent bacilli had been known to exist in the throats of healthy persons who had been attending cases of diphtheria, so that it was evident that such persons could convey the disease to others without perhaps themselves becoming ill. For this reason it had now become the practice of the health authorities to make cultures from the throats of the attendants on diphtheria patients as well as from those of the patients themselves. From an examination of four hundred and fifty cases of pseudo-diphtheria in which isolation had not been practiced, it had been found that no undesirable results had followed the neglect of this precaution. About ten per cent. of the cases broke out at the same time. The prevalence of pseudo-diphtheria, unlike that of true diphtheria, depended largely on the season of the year. It would seem that if those exposed to pseudo-diphtheria could keep their throats in a healthy condition they had little to fear from the disease. Experiments had been made at the Willard Parker Hospital to determine the comparative value of various forms of local treatment. The patients had been divided into three classes—one treated with irrigations of mercury bichloride (1 to 4,000), another treated with peroxide of hydrogen, and a third treated with lukewarm water containing a drachm of common salt to the pint. After treating eighty cases it had been decided that those that had received the irrigations of warm salt solution had done fully as well as the others, and that those treated with the peroxide of hydrogen had yielded the poorest results. They had not found that sublimations of calomel had proved antiseptic in the nasal passages. In concluding his paper, the author referred to the antitoxin treatment of diphtheria, and said that where sufficient doses had been used, all observers had noticed a very decided improvement in all the symptoms, particularly in effecting a clearing or arresting the growth of the membrane. So far as the treatment had been carried out

the Willard Parker Hospital, it had abundantly confirmed all the allegations made for it by foreign observers. Many patients that appeared on admission to be almost moribund had improved under this treatment with remarkable promptness. It also seemed to be an almost certain preventive when administered to persons exposed to diphtheria, though this immunity only lasted for a few weeks.

Diphtheria.—Dr. JOHN CROXYN, of Erie County, followed with a paper thus entitled, in which he compared diphtheria to the exanthemata, especially as regarded its period of incubation, and concluded that this was an indication that it was originally a constitutional infection. Frequently there would be a development of membrane in the larynx and bronchi shortly after it had disappeared from the fauces, showing that the infection already existed in the blood. It was not uncommon to see only slight local disturbance with such violent constitutional infection as to give rise to albuminuria, threatened heart failure, paralysis, etc. The writer cited the case of a medical man who was taken ill with what was at first supposed to be pneumonia. He then had a stomatitis, which quickly spread to the nose and eyes, and was rapidly followed by retention of urine and the appearance of diphtheritic membrane on all the mucous membranes—those of the mouth, throat, urethra, and rectum. In conclusion, the author expressed the belief that the disease might be local, but was always constitutional.

Dr. HERMANN M. BIGGS, of New York County, said he thought the work of the New York Health Department had shown positively that bacteriological examination of diphtheria was absolutely essential to its intelligent sanitary surveillance. It was now known that it was not necessary for the existence of true diphtheria to have an abundant exudation of false membrane in the throat, nares, or larynx; there might be virulent diphtheric bacilli present without the usual membranous exudation. On the other hand, there were many cases in which there was an abundant deposit of false membrane, and yet the bacteriological examination showed the disease not to be true diphtheria.

Referring to the antitoxine treatment, the speaker said he had had unusual opportunities in Berlin during the past summer to follow the work of the Institute for Infectious Diseases, which is controlled by the German Government for research, treatment and having a staff of seventy or eighty qualified persons. These studies were very convincing to the speaker that the treatment had proved beyond any reasonable doubt. In their last series of tracheotomies they had had seventy-five per cent of recovery. Apparently was a disease of which there is a fairly rapid onset, development of disease. The most common treatment being with the diphtheria antitoxin. The speaker mentioned a group of medical education. It had been found that the first case he had found, according to the speaker, was that of the outbreak, of which he had a number of cases, but no records of the disease.

[illegible]

The Technique of the Cesarean Section.—Dr. A. PARMER
 DEPOSED: "Now, I am going to describe the procedure in the
 second three patients who had been brought to the hospi-
 tal. The first one to be treated is Number 1. The patient is
 now lying on her back, and the abdominal wall is incised from the
 umbilical and forearm and swept about the uterus to determine the
 position of the fetus in relation to the placenta. The placenta is now
 separated from the uterine wall, and the fundus and neck
 of the fetus are exposed. The body of the fetus is delivered
 through the incision, and the arms are given by the assistant, who
 holds the head and trunk. The placenta is removed, and the

and amniotic fluid into the abdominal cavity, and cut off the blood supply sufficiently to prevent hemorrhage when the uterus was incised, yet without interfering with the fetal circulation. The uterus was then quickly incised along the anterior surface without reference to the position of the placenta while a second assistant made firm pressure on the abdominal wall so as to keep the upper part of the uterus against the abdominal incision. As the child was being extracted he gradually pressed the uterus out of the abdomen through the incision. All these manipulations were done under constant irrigation with hot boiled water. The umbilical cord was quickly clamped with two forceps and cut. Meanwhile the assistant had pressed the uterus through the incision, and had surrounded it with aseptic towels. During the detachment of the placenta the uterine cavity was irrigated with a 1-to-5,000 bichloride solution. The uterus now quickly contracted, and the uterine incision was closed with three rows of continuous catgut suture. The first row began at the inner edge of the upper angle of the incision and extended to the lower angle; the second row included the muscular layers and uterine sinuses; the third row closed the peritoneal layer. The elastic cord was now removed, and, if there was oozing along the line of sutures, this was controlled with hot sponges. The uterus was then irrigated with boiled water, dried, and replaced. The pelvic cavity was then irrigated and sponged dry, after which the abdominal incision was closed with three rows of suture and without drainage.

Hysterectomy for Uterine Fibroma by Baer's Method, with a Report of Nine Successful Cases.—Dr. JOSEPH TARRER, JR., of Washington, D. C., writes, *Obst. & Gynec.*, 11: 111: "I had found that convalescence in these nine cases had been very rapid and easy. Other similar methods required more time for their performance than Baer's method, although the latter took more time than total extirpation. We could not, however, safely discard the Bantock Price method, which was useful in many cases. The removal of the uterus down to the internal os, followed by the removal of the ovaries, was the best method."

Hysterectomy in Pyosalpinx.—Dr. W. R. PRYOR, of New York County, read a paper on this subject, and exhibited a portable operating table suitable for use with the Trendelenburg posture. He said that in at least one-third of the cases in which he had removed suppurating tubes without removing the uterus the symptoms had persisted. When it was necessary to bring on an artificial menopause, he maintained that the woman was better without the uterus. It should not be forgotten that in about twenty per cent. of the cases the uterus is also diseased.

immediately and widely; and after intelligent use, and upon a late consideration individual churches were accepted throughout the country with proportionate readiness, and with their adoption into practice another modest quatum might be added to our hopes and efforts in attaining a high standard of public health and an ever increasing longevity.

The following preamble and resolutions were introduced:

Whereas, The present use of common communion chalices or cups in churches exposes the communicants to the positive danger of acquiring certain contagious diseases, and is therefore a menace to the public health; be it

Resolved, That the Philadelphia County Medical Society hereby recommends the adoption of an individual-cup method or system of administering the communion wine in all churches, of whatever denomination or sect, where the common communion cup is now in use; and

Resolved, That this society believes from undoubted evidence that an individual chalice or cup system would be a clean and safe and reliable means of preventing the liability to the spread of contagious disease from such a source as may reside in the ordinary chalice.

Dr. LOUIS J. LAUTENBACH mentioned a case of syphilitic retinal hæmorrhage in a priest, who alleged that he had contracted a sore in the mouth in the manner indicated by Dr. Anders. Another similar case, concerning the origin of which the history was more clear, had occurred in his practice.

Dr. WILLIAM S. STEWART said he understood that in the Catholic Church the congregation did not drink the wine, but that they ate the wafer and the priest drank the wine.

Dr. JOHN C. DA COSTA sympathized with Dr. Anders, and indorsed much of what he had said, but questioned whether his ideas were practicable. With regard to a few of the leading religious bodies, in the Roman Catholic Church he was told that the priest alone partook of the wine; if so, there was no risk of contagion and no need of more than one cup. In the Presbyterian Church the people remained in their seats, and the four elders handed around the bread and wine. Now imagine, he said, a thousand partaking—and a separate glass

for each glass would only five square inches of table space of sixty-nine square feet and a half would be needed.

He said that in the Presbyterian Church the people remained in their seats, and the four elders handed around the bread and wine were handed to the people by the minister and other communicants shall, after the blessing, rever-

some relation between his conclusions and his premises—that those who partook of the communion cup were more liable to phthisis than those who did not. A great deal of loose thinking was being done on this subject. He did not see why, in addition to their natural affliction, this class of sufferers should be compelled to bear the cross of a new and artificial opprobrium. They had already suffered enough. He admitted that facts to prove the correctness or the falsity of the position of the reader of this paper were not easy to obtain, but as possible evidence that it was not correct, he stated that it was well to remember that phthisis was more prevalent among those of our Indians who had just come in contact with our frontier civilization than it was among those who had lived a more civilized life for many years in the interior of the States of Michigan, Wisconsin, and New York. The latter having been under the influence of missionaries and the Church, and having observed the rites of the same, they should be more liable to this disease than the former, if the communion cup produced any special havoc in this direction, provided, of course, that other conditions were alike. He hoped that Dr. Anders held statistics by which he could prove the accuracy of his contention in this respect.

Dr. JOHN AULDE said that he had long been convinced that the use of the common communion cup was productive of disease. Dr. Probst, secretary of the Ohio State Board of Health, about two years ago had delivered an address to a body of clergymen, calling their attention to the unsanitary features of this practice, and the investigation at Rochester, N. Y., seemed to have established the danger of the cup. If the one disease, diphtheria, could be communicated in this way, it was enough to condemn the practice without further discussion.

(To be continued.)

Miscellany.

The Muscles of the External Ear. The *Irish Journal of Medical Science* for October publishes an article on this subject by Dr. Ambrose Birmingham, in which the chief points sought to be established are as follows: 1. That the tendinous band which lies on the superior curved line, and is said to represent the transversus nuchæ, gives origin to the middle portion of the occipitalis and to the upper division of the retrahens auriculæ. 2. That the occipitalis is made up of three parts—an internal, which arises from the curved line, a middle, from the transversus-nuchæ tendon, and an outer, from the mastoid portion of the temporal bone; and that the outermost fibers of the muscle are frequently connected to the ear, while the next fibers send their aponeurosis forward under the attollens. 3. That the retrahens, in its perfect condition, is composed of an upper division which arises from the mastoid in connection with the outer part of the occipitalis and a lower which springs from the transversus-nuchæ tendon. 4. That the attollens arises from the outer surface, not from the margin of the epicranial aponeurosis, and that it is inserted partly into the outer, partly into the deep surface of the pinna. 5. That the attrahens auriculæ is a perfectly distinct and separate muscle, unconnected with the attollens; that it lies beneath the temporal artery at a deeper level than that muscle, and that a connection can easily be shown between it and the upper part of the attollens. 6. That the retrahens auriculæ is present in a far greater number of cases than the attollens. 7. That the latter is an inferior muscle of the ear, connected with the attollens,

8. That there is possibly a connection between the retrahens on the one hand and the obliquus and the transversus on the other.

9. That there is a deep fascia in the scalp between the epicranial aponeurosis and the superficial fascia.

In seeking the true connection of the retrahens or auricularis posterior, the attollens or auricularis superior, and the attrahens or auricularis, the author has found it necessary to look carefully into the arrangement of the occipitalis, the transversus nuchæ, and, in part, the frontalis. He has also noted in each ear examined the condition of the intrinsic muscles of the pinna, together with the presence of supernumerary muscles.

Regarding the absence of muscles, in every case examined there was a distinct, separate, and well-defined retrahens, attollens, and attrahens. There was occasionally found a parotidoauricularis; this muscle was present three times in twelve specimens. Another supernumerary muscle which the author met with a few times is made up of short fibers crossing the horizontal fissure which separates the lower part of the tragus from the concha. The helix major and the tragus have always been present and distinctly muscular. Out of twelve ears the helix minor could not be recognized three times, while the obliquus transversus, and the antitragicus were not represented by muscular fibers once. In the case of the three last the muscles were represented by fibrous tissue, but no distinct trace of the helix minor, muscular or fibrous, could be found in the three ears in which it was noted as absent. In taking up the various muscles the author calls attention to special points of interest or to details in which he has found the condition to differ from that described in the usual accounts.

The retrahens auricularis or auricularis posterior. This muscle is represented by a number of slips—distinctly fleshy slips—from one to five. Although the author has seen it occasionally represented by a single muscular bundle, in all cases these bundles were arranged in two sets, forming two main divisions of the muscle—an upper and shorter connected with the outer portion of the occipitalis, and a lower and longer connected with the transversus nuchæ. The former of these always arises in very close connection with the outermost part of the occipitalis, springing from the bone immediately below, just external to, or partly under cover of, the outer margin of the occipitalis. On seeing this region carefully dissected, and observing the actual complete separation of the lower part of the occipitalis from the rest of that muscle, its trend toward, and its frequent connection with, the ear, also the close relation of the upper part of the retrahens to this portion of the occipitalis, it is difficult, says Dr. Birmingham, to resist the conclusion that the upper part of the retrahens is produced by a slipping or rotating downward of the outermost part of the occipitalis. The lower division of the muscle will be seen to be perfectly continuous with the transversus nuchæ through the middle of the neck.

cross and are closely bound to the sterno-cleido-mastoid. As the muscular slips are followed back, at first sight they seem to be connected with the lower end of the sterno-cleido-mastoid.

ever, on removing the surrounding connective tissue, it will be found that there is no actual continuity between the dense fibrous cellular fibers passing continuously into tendinous bands which are loosely united to the osseous lacunae and the surface of the sharp, well-marked, well-defined, and thin layer of the periosteum and fibrous band. On fine dissection, the bone is found to be 100% bone that the fibers of the lacunae of the periosteum, the surface, and of the tendinous portion. Although we cannot find the continuity, the bones form a continuous, somewhat close together, as the sharp aspect of the bone, the bone is not continuous with the periosteum, as a continuous continuity of bone. However, when the bone is removed, it is found that the bone is

others and gained an insertion into the concha a third of an inch lower down. Another point of interest is that the author thought he found a slight connection between the highest bundle of the retrahens and the obliquus. This would point to the retrahens as the original source of the obliquus. A similar equivocal connection between the lower part of the retrahens and the transversus was observed.

versally taught, says Dr. Birmingham, that the attollens is in the same plane as the epicranial aponeurosis—in fact, it is usually looked upon as the lateral portion of that sheet which is represented by the frontalis in front, the occipitalis behind, and the epicranial aponeurosis between. Further, the attollens is always described as a thin, fan-shaped muscle which arises from the lateral margin of the epicranial aponeurosis. This certainly is the connection which seems to exist between the two structures, even on careful dissection; but occasionally one meets with a head in which the development of the parts, particularly the occipitalis, is specially favorable. The insertion of the attollens as usually given is very vague and inaccurate. The full insertion is as follows: The anterior fibers are inserted into the outer surface of the helix and into the anterior margin of that structure; the posterior half of the muscle is inserted into the deep surface of the fossa triangularis of the pinna, which on this surface is represented by a convexity. Between the two insertions is a part in which the muscular fibers are few or absent, their place being taken by connective tissue, when the muscle near its insertion will be divided into two parts—a condition described as normal by Henle. The portion of the attollens inserted into the helix is attached along a line beginning about the middle of the outer surface of the helix, a little above the level of its spine; from this the attachment runs nearly vertically upward and turns over the anterior margin, about at the level of the upper part of the fossa triangularis, while the posterior fibers of the muscle gain insertion into the deep surface of the fossa triangularis. Sometimes a few of the most anterior fibers are inserted at a distance from the rest, close to or at the base of the spine of the helix. Debieire, in his *Anatomy*, says the author, refers to the difficulty of making out with certainty the attrahens auriculum, which has usually been described as continuous with the anterior part of the attollens, but it will be found that the attrahens is always separated from the attollens by the temporal vein. It is true, as a rule, that the anterior part of the attollens is more or less distinctly separated from the rest of the muscle by the posterior branch of the superficial temporal vein, which comes through and becomes superficial here, while the corresponding artery runs up under the anterior part of the attollens. Besides, this small division of the attollens is generally inserted at some little distance from the rest of the muscle, approaching nearer to and sometimes reaching the base of the spine of the helix, while at its origin

it might be dissected and described as the attrahens.

[illegible]

and it is always separated by a connective-tissue sheath from the attollens. The author describes the muscle as a strap, but muscle of a distinct red color and of a new form shape, which will be found lying beneath the temporal artery in front of the ear, and a short distance above the vertex of the pinna in a line from the spine of the helix to the auricle. It is most easily exposed by drawing forward the temporal artery and cutting through the underlying fascia in the line of the muscle. It seems to arise by a curved margin from a layer of fascia which lies over the temporal aponeurosis about three quarters of an inch in front of the ear, and here its muscular fibers end abruptly; but, in certain cases, the muscle may be traced through the medium of scattered tendinous and thin muscular fibers into connection with the upper and outer part of the frontalis. The insertion is into the deep surface of the spine of the helix and into the concha behind this, running backward above the meatus for a variable distance. The insertion into the concha is the chief attachment. Probably the most notable point about the attrahens as an ear muscle is the considerable depth at which it lies.

The paratubercularis.—This is an occasional muscle which is slightly developed, being always pale and extremely thin. It springs from the fascia over the parotid gland, and, running backward and upward, gains insertion into the lower part of the deep surface of the concha, in about the line of the anterior border of the antitragicus.

The helix major.—The author does not know why this muscle is considered as an intrinsic muscle of the ear. He has never seen it confined to the ear alone. One end certainly is distinctly fixed to the ear; the other passes to the side of the head into connection with the attollens. When carefully dissected, it looks much more like a degenerated extrinsic muscle or a derivative of the attollens than an intrinsic muscle of the pinna. Some few fibers may end in the fascia covering the helix where it turns backward, but this is rarely a marked attachment.

The helix minor.—The frequent absence of this muscle is easily associated with its distinctly rudimentary character in all cases. The author simply calls attention to the fact that it usually bridges over a hollow or undulation in the cartilage on which it lies, as in the case of the antitragicus.

The tragus.—The author has always found this muscle present, although sometimes very badly developed. The slip was present only twice in twelve ears. In one case almost all the fibers of the muscle arose fanlike from a little tendon which was attached to a small spine situated at the lower and outer part of the tragus.

The antitragicus.—In one case, this muscle was not represented by muscular fibers, its place being taken by ill-defined tendinous fibers. It will always be found bridging over a distinct hollow or undulation in the underlying cartilage of the concha. The author has never seen an ear in which this muscle was distinctly attached to the tail of the helix. Its two ends are connected entirely to the antitragic process of the concha. The length between the latter and the antitragic process is about half an inch.

The tragus.—The muscle, when it is present, is composed of slightly radiating fibers, forms a thin, broad sheet which is attached to the tail of the helix, and extends forward to the tragus. The author has never seen an ear in which this muscle was distinctly attached to the tail of the helix. Its two ends are connected entirely to the antitragic process of the concha. The length between the latter and the antitragic process is about half an inch.

except its constancy. In several books it is described as an occasional muscle. The author found it absent only once in twenty ears.

In addition to the above-mentioned muscles, says Dr. Birmingham, a small muscle made up of short fibers crossing the fissure which runs nearly horizontally between the lower margin of the tragus and the lower end of the concha was found. If this is identified, he says, as the *dilatator conchæ* of Theile, he thinks that the muscle has been badly named.

Catheterism of the Fallopian Tubes.—In the October number of the *American Journal of Obstetrics* there is an article on this subject by Dr. Llewellyn Eliot, of Washington, in which he remarks that the possibility of catheterism of the Fallopian tubes has been denied and ridiculed time after time, and that it may appear foolhardy for any one to hint at such a possibility being an established fact. The propositions he desires to discuss are: 1. It is possible to catheterize the Fallopian tubes. 2. The possibility being established, the attempt to treat cases of diseased tubes by applications made directly to their surfaces is justifiable. After referring to the tubes and their anatomy, Dr. Eliot quotes from other authors to sustain his first proposition. Fritsch, he says, writes as follows upon the use of the sound in uterine examination: "Two noteworthy circumstances that may occur during sounding may be mentioned: If the uterine opening of the tube is wide, and the uterus is placed somewhat obliquely, so that the knob of the sound is directed to the tubal ostium, the sound may glide into the tube and pass through it. Although these cases are rare, they are still possible and authenticated. . . . If, in one of these extremely rare cases, the syringe should enter the tube and injection be practiced with great force, fluid could of course be driven into and through the tube. Danger would even then be possible if the injected fluid should displace a pathological tubal secretion and crowd it into the peritoneal cavity; but with care this is impossible." Hart and Barbour say: "In certain undoubted cases the uterine sound has been passed along the Fallopian tubes, while in others the supposed sounding of the tubes has been really the perforation of the uterine wall." Dr. Madden relates the following case: "Many years ago, having occasion to use the sound in a patient suffering from dysmenorrhœa, who had been sterile a long time, I was surprised, there being no enlargement of the uterus, to find that the sound passed in up to the handle, and that it had obviously entered the right Fallopian tube. A year later that lady gave birth to her first child, after eight years of married life. Since then I have repeatedly succeeded in accomplishing what in the first instance was but a happy accident, and more than once with a similar result. Hence, I invariably endeavor to impress, by clinical demonstration, the generally ignored fact that catheterism of the Fallopian tubes, when employed by a practiced hand with due caution, is a feasible, and in some instances may prove an effectual, method of treating certain cases of dysmenorrhœa and sterility otherwise incurable." Clarke writes as follows: "When called to cases in which the gonocœci have gone beyond the uterus, I have succeeded in several instances in passing the uterine sound and probe into the Fallopian tubes, using the tincture of iodine as an application to these parts."

In February, 1892, Dr. Eliot published his first experience with this method, and has never had cause to regret its application in other cases. He thinks he has proved that it is possible to catheterize the Fallopian tubes, and, this being so, he says, the second proposition becomes self-evident.

In the same journal, Dr. William P. Carr, also of Washington, says that we can not doubt the possibility, in some cases,

Lectures and Addresses.

THE TEACHING OF ANATOMY.

BY WILLIAM KEILLER, F.R.C.S. Ed.

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF TEXAS,
FORMERLY LECTURER ON ANATOMY IN THE SCHOOL OF MEDICINE,
EDINBURGH, SCOTLAND.LECTURE III.—THE DISSECTING ROOM. PRACTICAL ANATOMY
AND LECTURES.

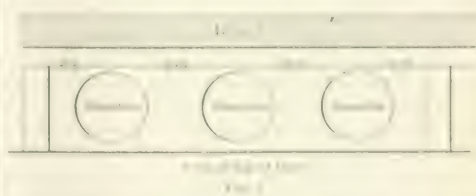
On opening the subject of the dissecting room it may be well to look at one or two points in the construction of the building which are necessary to make it what a modern dissecting room should be. The whole or great part of every modern medical building should be occupied by the anatomical department, the necessary rooms including a dissecting room, professor's private room and private museum, demonstrator's room and work room combined, students' room for hats and lockers (two of these if male and female students are both admitted), a large and small lecture room (the lecturer's area of which shall so open on the dissecting-room floor that bodies can be readily wheeled from the dissecting to the lecture room), a bone room and students' reading museum, attendants' room and urinal.

The dissecting room should be of a sufficient size to admit of one table to every five students of the first and second years, or about thirty tables for a hundred and thirty men, and each table requires at least ten feet by fifteen feet. Thus a dissecting room for a school in which during the first and second years a total of a hundred and sixty men may be expected to dissect must at least be forty six feet wide by a hundred and eight feet long. This would accommodate three rows of ten tables each. It must face the north, that in warm climates it may be cool and that in all climates it may avoid direct sunlight. The main light must be got from the roof. No side windows, however high, are capable of giving sufficient light for dissecting purposes.* It is impossible to appreciate the importance of this roof lighting till, after after having dissected in a roof-lit room, you try to dissect with side lights. For all the more important dissections a light coming right from overhead is absolutely necessary. The roof, then, should be one third glass on all sides all sides except the north being of aluminized glass to disperse the rays of direct sunlight, and its method of construction should be such as to afford the minimum of surface for the lodgment of dust. The room should be one large oblong, that its whole area may be taken as at once a source of great importance is the management of a large floor and room. The want in the layout of a dissecting room is

of glazed brick or cement. For the floor I do not like asphalt, were it only for its black color, yet, though not necessary, it is a great advantage to have a watertight floor sloping to a gutter down one side, and I suppose asphalt is the only practicable material of which such a floor can be made (except in the basement). But if the expense were not so great I should prefer a wooden floor, with calked seams like a ship's deck, sloping to a side gutter, so that it could be flushed with water and washed as easily as a ship's deck is washed. Conveniently situated at the side of the room should be twenty or thirty basins with hot and cold water and suitable towel racks, and near this a urinal. If ladies are to be admitted there should be a ladies' room containing lavatory, cloak room, lounge, and lockers.

With regard to dissecting tables, though slate tops are easily kept clean, and can not be cut by the inevitable pocket knife of the junior (or senior, for that matter), they and their metal frame are exceedingly heavy and very expensive. Zinc tables corrode readily, lead is too expensive, and I have found a wooden table such as I describe suits admirably, its only objection being the ease with which it can be attacked by the before-mentioned pocket knife. The table frame is very strong and firm, the legs four inches in diameter. The tops are of hard wood, six feet six inches long by one foot ten inches wide and an inch and a half thick. The top slopes toward the center (dip, an inch) and towards one end (fall, three inches), the height at the higher end being three feet two inches. A wooden bucket in which some water is kept is hung on the lower end. The vacant sides of the room should be occupied by a framework containing dissections conveniently mounted for reading, as is the custom in Scotch dissecting rooms.

I shall have more to say of this method of mounting dissections by and by, as I am not aware that it has been as yet described; the following will suffice to indicate my meaning: Take such a region as the popliteal space. The limb having been injected, a portion is cut, including five or six inches above and four or five inches below the knee joint, a firm bandage two inches broad having been previously applied below the upper point of section and above the lower to maintain the parts in their proper positions after section. This is at once transferred to the basin, which is to contain it permanently and covered with a mixture of one part sand, alcohol and two thirds



* The illumination of the dissecting room is of great importance. The light should be got from the roof. No side windows, however high, are capable of giving sufficient light for dissecting purposes. It is impossible to appreciate the importance of this roof lighting till, after after having dissected in a roof-lit room, you try to dissect with side lights. For all the more important dissections a light coming right from overhead is absolutely necessary. The roof, then, should be one third glass on all sides all sides except the north being of aluminized glass to disperse the rays of direct sunlight, and its method of construction should be such as to afford the minimum of surface for the lodgment of dust. The room should be one large oblong, that its whole area may be taken as at once a source of great importance is the management of a large floor and room. The want in the layout of a dissecting room is

water. The joint may be covered with a bandage, it is of some glazed surface, by a small hole for filling it with water from the top and has a small ground hole in which is

on the bones of his part should be allowed to commence dissecting till he has mastered them. It is absolutely impossible to read the muscles intelligently till the bones are perfectly familiar. So important do I consider the skeleton that I consider a private disarticulated set of bones as necessary to each student as his books; but a bone library will be the next best thing to supply the deficiency, and each student should be taught to mark the muscles on the bones as he reads from the diagrams in his books or from painted bones under glass in the bone room. Colored chalks are the best thing to use (blackboard chalks, not chalk pencils), and the old marks may be readily removed by a little hydrochloric acid.

I object to the systematic method of dissecting, where the student first dissects the muscles, with little or no attention to vessels and nerves, and makes a second dissection of vessels and nerves, and I prefer the regional method, and that for the following reasons:

1. With proper preparation of the bodies it is not necessary that the student should hurry over his work that the part may be got off the table. There is no reason why a part should not keep well for six months or more. Speed, then, is no argument in favor of the systematic method.

2. The systematic method involves a great waste of material. This may not matter where material is unlimited, but is an insuperable objection where bodies are short of the demand. I believe that deficiency in material gave rise to the regional method of dissecting.

3. The systematic method begets a careless habit of dissecting. It is scarcely possible to teach the student to disregard vessels and nerves in his first dissection and at the same time to clean his muscles thoroughly, while in his second dissection it is impossible to thoroughly clean vessels and nerves, removing all cellular tissue and fat from around them and defining them, without cleaning the muscles, and this involves careless work or waste of time. That one may get a proper view of any muscle it is necessary to thoroughly remove its fascia propria; to get a proper idea of a vessel's relations it must be studied when as little disturbed as possible and also when thoroughly cleaned. Nothing so trains the hand to good surgery as careful dissecting; therefore let us teach our students to work carefully, thoroughly, and accurately from the beginning.

4. The systematic method does not so thoroughly fix the relations of the parts as the student acquires in the regional method. The relations of the parts to each other is the very foundation of the regional method; every step in the dissection requires the observation of a relation. And the relations of parts to each other and to the organs of the body are at once the most important and most difficult of relations to learn and to retain. For the acquisition of such knowledge there is no comparison between the two methods; the regional being far better. Were time, power, and the supply of bodies unlimited, the best way to get up anatomy might be that a student study the body systematically, then by regions, then to study it by systems, and lastly to make a series of systematic dissections important surgical structures. But it is not in my mind that

is fleeting," so we must acquire the most knowledge possible in the shortest time.

5. While it is undoubtedly easier to acquire anatomical facts by systematic dissection, it does not follow that the knowledge thus obtained is longest remembered; on the contrary, I feel sure that the slow and laborious dissection of the body by regions will impress the facts on the student's mind more indelibly than any other method.

6. By regional dissection the student sees the parts as nearly as possible such as he shall meet them in the operating room. Therefore I would have him examine each region as carefully as possible when the parts are least disturbed. The axilla should be cleared of its fat and the main relations studied before the pectoralis major is reflected; the cubital fossa and popliteal space should be studied before the front of the arm and back of the thigh have the skin reflected from them.

The next question for decision is how, in a strictly graded two-years' course of anatomy, to best divide the subject. My present method is to make my juniors get up the whole arm and leg (including bones, joints, and soft parts) and the bones of the trunk and head. This, where only two hours daily are given to the subject, leaves only a little time over at the end for revision (our session is seven months), but if I had any time over I would give a superficial sketch of the thoracic and abdominal organs to prepare them for their lectures on practice of medicine and surgery in the second year. In the second year they get up the trunk, head, and neck, brain, eye, and ear, and the elements of embryology. This was the division of the subject made by the Royal Colleges of Physicians and Surgeons, Edinburgh, for their first and second professional examinations, except, of course, that in the second examination the whole body was included, and I have adhered to it. I think it the best division for the following reasons: The anatomy of the extremities is especially suited to juniors because it is very definite and easily verified by dissection. There is nothing so fixed and definite and readily demonstrable about the abdomen and thorax, and while it would be well that the student should as quickly as possible master these regions to prepare him for his physiology, etc., still I feel confident that they do not afford the same field for accurate training in anatomical methods as the extremities do. Then the head and neck are too hard for the junior. To carry out my method of teaching I have found it best to spend two juniors to each case and by two sessions to the trunk, and two sessions to the head and neck. The brains I remove immediately after the bodies are injected, find in them, and give them to the students to dissect once. The two sessions on each trunk should spend about three of the week dissecting the bones and joints, and it is impossible for the two sessions to work on the trunk in the same time. The next step in the comparative dissection will dissect and read it home. It has a great advantage in that it has been arranged so that when the student has dissected and read it home it shows a more complete and accurate knowledge of the structure of the trunk and neck than any other method. On these the body is dissected. A student on the parts are dissected, it is the only way to

student to wrap up his part in a separate wet cloth and oiled wrapper, paying especial attention to hands and feet. Throughout his dissection he is instructed to expose as little as possible and to rub the dissected part frequently with carbolic-acid glycerin (1 part in 10). This is all that is necessary to keep the parts indefinitely. The parts being wrapped up, the body is first tied in the lithotomy position for the dissection of the perinæum by the trunk men, and till this is finished no other dissection can proceed. For the rest, my method is similar, with minor variations, to that described in Ellis, Holden, Heath, or Cunningham. I find Ellis and Cunningham too much for the ordinary junior, but invaluable to the advanced student, while, on the whole, I prefer Heath for ordinary students' purposes.

Now comes the problem how to deliver a course of lectures which shall assist the student in his practical work, for undoubtedly the dissecting-room work is the most important, and lectures will be most successful if the student finds in them the best aid to his dissecting, and if they assist him in getting up and retaining what he daily finds with his scalpel. I do not believe much in systematic lectures on anatomy where the student's time is at all limited, as it is of necessity in a three-years' course. It is exceedingly difficult to maintain the attention of the majority unless each lecture can have some bearing on their practical work; and if time be at all pressing, it is hard for the average student to keep up his reading both with a systematic and a practical course. In the endeavor to keep my students dissecting with uniformity, I devised the following method when my class was small, and I have now verified that, though with a large class it is laborious, yet it is practicable, and teaches more anatomy in a given time than any other method I have tried or am acquainted with. The time at my disposal is, for junior students, two hours daily (11 A. M. to 1 P. M.), and for senior students two hours daily (2 to 4 P. M.). On Saturdays the hours are earlier, Saturday afternoon being a half holiday. My junior students are divided into two sections, those dissecting the arm and those dissecting the leg. On Monday I lecture to the arm section from 11 A. M. to 12 M., while during the same hour my demonstrator has a quiz class with the leg section on the previous day's work; from 12 M. to 1 P. M. I lecture to the leg section, and my demonstrator quizzes the arm section. On Tuesday both sections will dissect what I have lectured on. If necessary, two lecture days or two dissecting days may be made to follow each other. I have proved that this is a good practical method with a class of one ninety juniors and with a corresponding large senior class. At lecture are therefore lectured on regional anatomy, contrasting instructions for the following day's dissection, describing its salient points, and

The senior students, to assist in necessary, calling his attention to points of applied anatomy; telling him, in my own words, for him to write down in his book for himself how to fix it in his memory. In my lecture class I do not use dissections, but have one there, and their own class dissection. I depend entirely on diagrams, and these I always draw before the class. There is no comparison as to the

usefulness between the diagrams drawn before the class and the finished picture hung up on the board.

One great advantage is that, once get him impressed with their utility, and the poorest draughtsman in the class will try to copy your diagrams, and when the anatomy student begins to make his own diagrams, however rude they be, he has got on the right track for a sound anatomical training. For those lecturers who are not ready draughtsmen, I would advise the use of separate blackboards with outlines of bones painted on them permanently in white.

Let me explain their use first, and then I will show how such blackboards can be cheaply constructed. Suppose a lecture on the gluteal region. Have prepared two, or at most three blackboards, with outlines of the bones. I outline them myself in white chalk as I want them, glancing at the skeleton as a guide. Draw in first before the class the greater and lesser sacro-sciatic ligaments; next mark faintly in colors the origins and insertions of all the muscles, asking, if you like, members of the class to name them as you put them in; guided by these, fill in the deepest muscles; then on the top of this put in vivid colors the main vessels and nerves; now cover these up with the glutei medius and maximus, and you have given your students a general view of the region. Do this now in the reverse order and in more detail, making a separate picture of each stage of the dissection, supplementing with simple outline diagrams of the gluteal and sciatic vessels and another of the sacral plexus, and the students who take down each of these diagrams and follow your descriptions feel that they know something about the region. I find that men who despair at first of drawing anything soon take down my diagrams pretty well; but the work would be greatly facilitated by supplying the students with a series of outlines to be filled in.

The blackboards can be made cheaply in any number. Procure some cheap floor cloth, cutting it into the requisite number of sheets, all of the size most convenient for an average diagram (all must be exactly the same). Paste on one or both sides of these a sheet of prepared blackboard cloth, using a paste made of flour paste and glue; put brass eyelets, such as are used for sails or horse covers, into the two upper covers, and you have as many handy blackboards as you may wish. Have an easel and common blackboard with two nails to stretch the one you are using on, and when you are done with it hang it up on two convenient nails on the class-room wall. Outlines painted on these in white oil colors, or in a mixture of gold size and zinc white, will remain permanent and allow any amount of chalk work.

When my arm and leg sections have finishing dissecting these parts their work is reversed, and the same course renewed. So the seniors are divided into a trunk section and a head and neck section, while all the juniors join for the joints and skull bones, and all the seniors are taken together for brain, eye, and ear. Now I would submit that such a series of lectures is much more useful to the student than an attempt to go systematically through Gray, repeating carefully, for example, the origin and insertion of

every muscle, its action and nerve supply, even though we show each point described on dissection, skeleton, model, or finished drawing.

Original Communications.

LAPAROTOMY FOR PELVIC DISEASES.

WHY CONTINUE IT?

BY R. STANSBURY SUTTON, M. D.

ALLEGHENY, PA.
SURGEON TO TERRACE BANK HOSPITAL FOR WOMEN.

SINCE Tait taught us in 1880 that something beyond the administration of drugs might be done for women suffering from diseased uterine appendages, he has had an enormous following in the United States. No end of good has come from his wonderful advance beyond the teachings of those who represented gynecology before his time. No end of evil has followed in the wake of his disciples. Like all improvements of great merit in modern times, his method brought relief to thousands, death to hundreds, and exchanged one misery for another in scores of others. Tait was a giant. He stimulated thousands of surgeons to think for themselves, to act independently of ancient literature, to seek a new medical religion. He played his part in the great drama of human progress. But are we not now, after more than a decade of observation from the high plane to which he called us, to ascend still higher and to achieve for women more than has yet been achieved? Are we to continue doing laparotomy for pelvic diseases? I believe that I know whereof I speak when I venture the statement that we are not. Since Péan, in 1891, began attacking pelvic diseases through the vault of the vagina a new advance has been in progress. Following Péan came Segel, Jacobs, Sanger, Langfeldt, Landau, and others, to confirm and to still further advance the good work begun and continued by Péan. The day has gone by when we can longer afford to adhere to laparotomy for pelvic diseases and tumors growing from the pelvic organs and still young, or still occupying the pelvis and even the lower abdominal cavity. Jacobs has proved that eighty-five per cent. of women requiring removal of the uterine appendages have been infected by gonorrhea. Is it logical to do total extirpation or laparotomy in these cases? Why remove the uterine appendages and leave the infected uterus? Why risk the uterus in the future to be subsequently the source of confusion and pain? Why leave in the pelvis a cavity the infected stump is infected tissue? Why risk the risk by the old method, the extirpation of the infected appendages, of suppuration, abscess, fistulas, returning ligatures, and ventral hernias? Is the infected uterus worth saving at such a cost? Why not remove the infected uterus, rather than leave it to continue festering and to be the first of a long series of complications, both at the hands of the physician and the patient, and that it need a long and painful recovery, have total extirpation of it as a final and speedy cure? Can we say anything like that for laparotomy? Truly believe that

who will assert so clear a record for laparotomy. What of the fifteen per cent. of cases infected by tuberculosis, dirty and officious gynecological procedures, the foul discharges after abortion? If we must remove the appendages, why spare a useless and diseased uterus? If the infection has traveled by the lymphatics, and abscess is the result, evacuation by the vaginal route is more rational than a route made patent by laparotomy and a tube. If the uterus is the seat of a fibroid, interstitial in character, Péan has even pointed out at the recent congress in Rome that it may be removed by the vaginal route. If the uterus is to be sacrificed, then by total extirpation and morcellment all may be removed by the vagina with ease and safety, as I have seen Jacobs do, avoiding all the risks of the troublesome sequelæ of laparotomy. Small cysts of the ovary, large cysts without high adhesion, parovarian cysts, fibroids of median dimensions, may all be removed by the vagina, with or without total extirpation. The time has surely come to call a halt on the universal custom of opening a woman's abdomen by laparotomy for every ailment of her pelvic basin. Are there other advantages than those hinted at for substituting total extirpation or vaginal section for laparotomy? Jacobs has had a mortality of 1.4 per cent. in one hundred and forty total extirpations by the vagina. Tait says that three per cent. is an allowable mortality in laparotomy for removal of the uterine appendages. My own mortality is a fraction under three per cent., but Jacobs and Péan have done better than this in total extirpation by the vagina. The average length of time the laparotomy patient is confined to bed is nearer twenty-one than fourteen days. I saw Jacobs's patients sitting about the wards and rooms knitting on the eighth day after total extirpation. Did you ever see anything like this after laparotomy? I saw his patients, after total extirpation, in the garden in ten days. How often after laparotomy have you seen this? I have in many years' experience had a few cases go to their homes near by in ten and twelve days.

It is rare—with Jacobs's patients it is the rule—to be up in eight days, to go home in fourteen. Why not abandon laparotomy for an operation giving so many phenomenal advantages? It may be dangerous, and also operated in a position to fail, but this operating in the great operators of the metropolis. But, forgiven or not, I believe them to be good at the old operation, followed so often by disappointment, for the new, which promises for suffering women everything which the old operation gave them plus what it did not give them, viz., a cure.

The Soft-rubber Pessometer.—At the Montreal Medical Congress in 1893, Dr. J. B. Bouchard presented a new instrument to the general assembly. It consisted of a small, oval-shaped, soft-rubber pessary, which was inserted into the vagina and used to measure the depth of the uterus. The instrument was described as being of a soft, elastic material, and was used to measure the depth of the uterus in cases of uterine prolapse, and in cases of uterine cancer. It was also used to measure the depth of the uterus in cases of uterine fibroids, and in cases of uterine adenomyosis. The instrument was described as being of a soft, elastic material, and was used to measure the depth of the uterus in cases of uterine prolapse, and in cases of uterine cancer. It was also used to measure the depth of the uterus in cases of uterine fibroids, and in cases of uterine adenomyosis.

A CASE OF CIRROID ANEURYSM. LIGATURE OF THE COMMON CAROTID ARTERY.*

By WILLIAM D. HAMILTON, B. A., M. D.,
COLUMBUS, OHIO.

THE patient, C. W., a farm laborer, nineteen years of age, was referred to the writer by Dr. Holcomb, of Pennsville, Morgan County, Ohio. He had always enjoyed fair health.

The disease for which he sought relief had existed from childhood. At the time of his admission to the Mount Carmel Hospital, January 25, 1894, the following facts were observed: A pulsating tumor occupied the right side of the head and face. It was purplish in color and lobulated in shape. The overlying skin and the subjacent bones of the skull had been thinned by the throbbing of this vascular mass. From near its origin in the neck the external carotid artery was dilated and tortuous. The temporal branch was chiefly affected. Three straight lines, connecting the right external auditory meatus, the bridge of the nose, and the center of the top of the head, would roughly have outlined the area involved. The entire triangular surface thus described was covered by the growth. A distinct bruit could be heard over most parts of it, more clearly, however, in the course of the external carotid. The temperature of the part was slightly elevated. An impulse could everywhere be felt in it with the finger. The tumor could be compressed with the hand by firm pressure, but not controlled if thus diffused. A finger against the right common carotid would stop pulsation completely. Similar force upon the external carotid was less effective. The discoloration and tumefaction extended to the right eyelids. On the forehead the tumor reached for a distance of half an inch beyond the median line. The greatest prominence in front was in the neighborhood of the right frontal eminence, while the region of the side of the head within the limits specified showed marked distortion and powerful and rich vascularization from its encroachments. A deep sulcus in the subjacent bones marked the course of the temporal. The diagnosis was that of cirroid aneurysm.

Surgeons are agreed that cases of the kind are usually intractable. It is a significant fact that, while many expedients have been tried for their correction, no reliance can be put upon any particular method.

For a century the very multiplicity of therapeutic or surgical suggestions for the treatment of a disease is a concession of our weakness in coping with it.

It may be well to name the procedures that have, with some degree of success, been advocated for the treatment of this pathological condition:

1. Ligation of one or both carotids.
2. Excision.
3. Hypodermic injections of tincture of chloride of iron or of pure iodine.
4. Counterincision.
5. Direct ligation around the periphery by multiple ligatures tied with fine pieces of gauze.
6. Radical surgical excision was claimed by ligatures with needle and thread.

Of these methods and the history of the treatment of this case, I have written a monograph of 100 pages, in manuscript, which I have thought well to give to the profession of this country.

For a more detailed account of the case of this patient

Read before the Ohio State Medical Society, May 1, 1894.

though they were not paramount: the patient was anxious to have it done; again, it was hoped that there might be an improvement in his appearance.

As to what to do in an operative way: It was too diffuse to tie in segments. Electrolysis was abandoned as unpromising and impracticable for the same reason. Injection meant the risk of embolism. Excision implied a perilous, bloody performance with profound shock. Peripheral ligation piecemeal would have left a diseased external carotid, showing incompleteness or recurrence, or both.



FIG. 1.

It was decided to tie the common carotid for three reasons: First, the attenuation of the walls of the external branch incapacitated it for the reception of a ligature; second, the engorgement of the right eye and lids showed how readily the collateral circulation through the internal branch might spoil the result if only the external were tied; third, the facility with which the common trunk could be tied. He was prepared by shaving and disinfecting the scalp. The head and neck were scrubbed with green soap, washed with ether, alcohol, and sublimate water, and a bulky gauze dressing was applied.



FIG. 2.

The operation was performed at the clinic at the hospital on January 26th. Ether was used as an anesthetic. The usual motion was made about the external border of the sternomus-

albuminoid bodies into such harmful material. Through the labors of Jaffé, Baumann, Brieger, and others, it has been ascertained that the most important of these products, which belong to the aromatic series, are elaborated as such in the small intestine and eliminated with the urine.

These products are indol, phenol, skatol, paracresol, and pyrocatechin. They appear in the urine combined with H_2SO_4 and are known as the aromatic group. Could it be proved that these chemical changes take place only on the decomposition of the albuminoids in the intestine, and that they do not form in any other part of the body, then an opinion could be given as to the extent of the decay, or putrefaction, by means of chemical examination of the urine.

Baumann noticed in a patient with a fistula in the upper part of the small intestine that urine during the time in which the intestinal contents did not pass out by the natural means showed a considerable diminution of aromatic sulphates, containing only traces of phenol and indol. When this fistula was closed and the intestines restored to their normal function, it was noticed that the elimination of the aromatic sulphates was increased very much.

An exactly similar case was reported by Ewald.

On the strength of these observations it goes to show that in the jejunum a certain number of aromatic combinations are produced by the action of micro-organisms and the intestinal juices on the food.

Baumann and Wasliff found a decrease of aromatic sulphates in the urine of starving dogs, and an entire absence of the same after the intestine had been disinfected by means of large doses of calomel given several consecutive days. It might be well to mention here the researches of Ortweiler, who ascertained that in febrile diseases not involving the intestinal tract, which are accompanied by destructive tissue changes, there is no increase of indican in the urine.

If these aromatic combinations are not products of intestinal decay, then why do we not find them in the muscles and in healthy organs? All investigations have failed to show their presence there, while on the other hand the intestinal discharges of starving animals always show the presence of considerable indol; furthermore, it has been generally found in animals and humans that indol is exclusively a product resulting from the action of bacteria on albuminoids. If we consider that micro-organisms do not occur in the tissues of healthy organs, as has been conclusively proved by Metchnikoff, Ziehl, and Hesse, we must necessarily come, in the conclusion, that the formation of aromatic combinations in the organs outside of the intestinal tract is not physiologically conditioned out of the question.

Following the theory that there is an increase of indol and phenol in the urine of putridity also under febrile conditions, it might be assumed that in the case of pyrexia and a moderate fever a more marked and still increased indol and phenol in the urine is caused by the action of the bacteria that are in the intestine. It might be assumed that the increase of phenol in the urine is caused by the fact that the bacteria in the intestine are in a more active condition.

He found an increase of phenol in the urine of the

peritoneum, acute peritonitis with constipation, empyema of the lungs, septic and puerperal fevers, diphtheria, erysipelas, etc. He concludes from this that phenol shows either increased decomposition of the contents of the intestine or the presence of a putrid area in the body.

Jaffé found an increase of indoxyl in diseases of the small intestine; a decrease in dysentery, pathological conditions of the large intestine, stomach, and duodenum.

Senator reports an increase of indol in chronic wasting diseases—such as malignant lymphoma, chronic peritonitis, and cancer of the stomach.

The writer of this paper has found the aromatic combinations greatly increased in one case of pernicious anæmia and in a number of chlorotics. It may be said here, before administering iron to these cases, it is absolutely necessary to disinfect the intestinal canal as given later in the article.

Heninge says that a large amount of indoxyl is present in the urine of pernicious anæmia, typhus, cholera, chronic suppuration, progressive atrophy of muscles, and Addison's disease. He attributes it in part to the increased separation of the constituent of the albuminoids and in part to an increase in the amount of pancreatic juice.

Hoppe-Seyler, as a result of exact clinical investigation, has come to the conclusion that in general the excretion of these bodies goes hand in hand with an increase of those processes which impair the digestion in the small intestine. The investigations of Hirschler, T. R. Müller, Helden, and others show that the aromatics are diminished in the urine when the albuminoids are excluded from the food and a large amount of carbohydrates is used instead. As a result of these observations we can see that the derivatives of the aromatic series appear in the urine under physiological conditions as the result of the putrefaction of substances containing water.

Ortweiler found that bismuth subnitrate in large doses had no effect on intestinal putrefaction; large doses of castor oil produced an increase of the aromatic sulphates. Kast ascertained that neutralizing the stomach with large doses of alkaline carbonates had a very decided and lasting effect in the increase of aromatic sulphates; in hyperacidity of the stomach the aromatic sulphates were diminished.

Morax, in his experiments performed upon animals, found that calomel and iodoform diminished the aromatic sulphates, whereas ordinary doses of calomel given to human beings did not act as an intestinal disinfectant.

Rovighi found that large doses of the terebene group and camphor given to animals diminished the putrefaction to a considerable extent; these compounds administered to healthy persons had very little effect.

Biernecky found that on an exclusive milk diet the aromatic sulphates diminished one half in twenty-four hours.

Winterstein's experiments have proved that albuminous putrefaction is greatly lessened in the presence of milk sugar, glycerin, and lactic acid. He found that on adding a large quantity of milk to beef extract albuminous putrefaction was greatly diminished.

after kumyss: 7, thirty-six hours after kumyss. All these cases (excepting No. 3, which was a jaundice case) were typhoid.

I. *Examination of Urine.*

Case.	Amount passed in 24 hours.	Normal sulphates.	Aromatic sulphates.	Remarks.
No. 1 (a)...	630 c.c.	2.0882	0.1373	Decreased 85.4 per cent.
" (b)...	450 c.c.	1.6083	0.0202	
No. 2 (a)...	960 c.c.	1.9357	0.1829	
" (b)...	1,900 c.c.	2.0744	0.0366	80 "
No. 3 (a)...	1,060 c.c.	1.8529	0.1515	88.8 "
" (b)...	1,160 c.c.	2.3563	0.017	
No. 4 (a)...	1,520 c.c.	1.7781	0.0178	
" (b)...	1,790 c.c.	4.4964	0.0292	96.4 "
" (c)...	1,500 c.c.	2.4957	0.0693	100 "
" (d)...	1,750 c.c.	2.4007	Nothing.	100 "
" (e)...	1,400 c.c.	3.5466	0.08205	100 "
No. 5 (a)...	550 c.c.	0.7865	0.0616	95 "
" (b)...	560 c.c.	0.7996	0.0616	98 "
" (c)...	950 c.c.	1.2765	0.0266	91.3 "
No. 6 (a)...	1,240 c.c.	2.4986	0.176	91.3 "
" (b)...	500 c.c.	1.5084	0.0154	

The weight of the aromatic sulphates estimated before taking kumyss is figured as one hundred per cent.; for example: Case I—(a) the aromatic sulphates are 0.1373, which equals one hundred per cent.; (b) the aromatic sulphates passed after taking kumyss are 0.0202, which is equal to 14.6 per cent., being a decrease of 85.4 per cent.

The antiseptic action of milk depends upon the formation of lactic acid. In kumyss the lactic acid is already formed. Hayem, Lesage, and Thomas report beneficial results from lactic acid on different forms of diarrheas of children. Hayem, when lactic acid was given in very large doses, could find it in the feces; all this goes to prove the germicidal effect of lactic acid in the intestines. Having taken fifteen grains of lactic acid in one litre of water, the writer found that there was moderate influence on the excretion of aromatic sulphates—much less than in the use of kumyss. Perhaps this may be accounted for on the ground that the latter also influences normal digestion more favorably, since it contains one per cent. of alcohol and several salts which check fermentation.

II. *Examination of Stool.*

Case.	Time.	Amount.	Remarks.
No. 1.	Normal.	800 c.c.	0.108016
"	"	2,280 c.c.	0.28265
"	"	2,380 c.c.	0.11971
No. 2.	Normal.	780 c.c.	0.108016
"	"	3,017.86	0.108016

aromatic sulphates, then diminished them. Calomel administered in large doses for two to three days slightly diminished the aromatic sulphates. Oil of eucalyptus given for three to four days diminishes the aromatic sulphates.

Conclusion:

1. The quantitative estimation of the aromatic sulphates present in the urine is a valuable point in judging the putrefactive changes in the intestines.

2. As the amount excreted varies with the time of the day, it is absolutely necessary to examine a sample from a twenty-four hours' specimen of urine.

3. Kumyss reduces putrefaction to a minimum, is readily assimilated and should be given freely in all cases of intestinal putrefaction.

The writer is under the greatest obligation to Mr. A. Arend, 189 East Madison Street, who furnished all the kumyss for these experiments.

Dr. J. W. Walker, of the house staff, Cook County Hospital, furnishes a clinical report of cases on a diet of kumyss.

The cases referred to in the foregoing table (No. I) were patients in the Cook County Hospital during July and August under the services of Dr. Earle, Dr. Sintzel, and Dr. Turck.

In Case 3 the patient was admitted with a history of having been jaundiced for nine days and had then the usual symptoms of hepatic colic. The urine contained a considerable amount of bile pigment, and the stools were of a pale-gray color. He was kept on a diet of kumyss after the first twenty-four hours, and left the hospital in eleven days, at which time his icterus was rapidly clearing up.

The remaining five cases were of typhoid fever with the characteristic signs and symptoms of that disease. All the patients recovered, Case 1 being the only one with complications, phlebitis, orchitis, and a synovitis of the knee—all on the right side. A plan of symptomatic treatment was adopted in all the cases, none of the intestinal antiseptic medicines being used. After the collection of the first twenty-four-hour specimen of urine, the patients were kept on a diet of kumyss until able to take solid food. Most of them disliked it at first, but after being urged a few times they all acquired a liking for it and took it readily. Each patient received about three quarts in twenty-four hours.

MALTOSE VERSUS GLUCOSE.

By R. G. ECCLIS, M.D.

BROOKLYN.

The physiological reasons for my recently published objections to glucose as a food were, I thought, so well understood by educated men that I did not attempt at that time to amplify them. I was surprised, however, to learn that a number of my acquaintances had got the impression that my reasons given for a condemnation might apply to almost prepared food for infants and invalids and that a new food preparation on the market. It thus became evident that in the information even medical men have, was not complete, and I felt constrained to settle

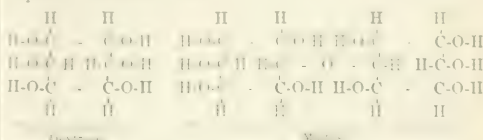
points in the physiological chemistry of starch digestion. Hosea's exclamation of "My people are destroyed for lack of knowledge" may prove to be an apt quotation at this juncture. The misunderstanding of this subject is likely to lead to results fraught with danger to their patients, for it appears that a number of physicians hold to the old notion that the ptyalin of the saliva converts starch into grape sugar, glucose, or dextrose. This error was refuted almost half a century ago, but periodically it is found to creep out in medical literature or enter as a factor into medical polemics.

The first discovery of the production of sugar from starch was made by Kirchhoff in 1811.* He showed that dilute sulphuric acid when boiled with starch converted it into sugar. In 1813 he also discovered that grain, and especially malted grain, contained an albuminous substance capable of producing sugar from starch.† He considered the sugars of these two methods of transformation identical. In 1831 Leuchs found that saliva had the power of changing boiled starch into sugar.‡ In 1833 Payen and Persoz succeeded in separating the amylolytic ferment from germinating barley and to the new product they gave the name diastase.¶

In 1845 Mialhe separated the ferment from saliva and called it animal diastase.|| He believed that the diastase from malt and the new product from the saliva were the same, and that the sugars of both were identical with that produced by boiling with dilute sulphuric acid. It remained for Dubrunfaut, in 1847, to prove the falsity of part of this conclusion. He showed that, whereas the two organic enzymes produced the same sugar, that which was developed by boiling starch with sulphuric acid was quite a different one.¶ To the sugar produced by the action of the enzymes he gave the name maltose. His work remained unverified and almost unnoticed till 1878, when Musculus took up the subject, confirming what had been said and adding more to our knowledge in the same direction. Since then this matter has been repeatedly confirmed by a large number of experimenters, but the work of Brown, Heron, and Morris completely set the matter at rest by placing it on a thoroughly reliable basis. § This work was done between 1879 and 1885. It was at this time that the great discovery of the identity of the products of diastase and ptyalin was made, though it was not then known that diastase and ptyalin could not be alike. Maltose and not dextrose is the product of the action of the gastric enzymes. Considered from above we have three distinct processes: different starting points, or the ptyalin, saliva and different crystalline forms, and from these three following substances in culture: soluble dextrose, § Maltose, §

shown, is isomeric in structure with ordinary cane sugar or sucrose.

The difference between these sugars becomes apparent on placing two graphic formulæ together that contain their elements in proper proportions. The exact structures not having been determined, these are, of course, but fanciful arrangements and are only introduced to facilitate thought. It is quite certain that the true formulæ, if we knew them, would be related in some such manner. Indeed, the fact that the sugars so readily produce oxalic acid on oxidation, points to some such structure as that here depicted as the true one.



Maltose.

Maltose.

The first act of digestion in the human body is that of the enzyme of the saliva upon starch, the product of which we see in maltose and not in dextrose. The importance of this fact will be made clear when we come to consider the successive steps in the assimilation of food. The physiological balance of our bodies can only be properly maintained by the thorough mastication of our food, as much because of this fact as for any reason hitherto assigned. Whoever fails to impregnate what he eats with saliva and its ptyalin is courting dyspepsia by hindering other subsequent acts of digestion. One of the gravest mistakes we have made in the past has been in supposing that the stomach only has to deal with proteins that albumin, casein, gluten, and the like were disposed of. The fact is that the very first important act performed in the stomach is the digesting of starch. All gluten reaches it enveloped in an insoluble coating like the sugar or gelatin on the outside of a pill. To make way for the digestion of proteins this must be rendered soluble and removed. To do so starch-digesting has to be the first task of the stomach. Following it comes proteid digestion. Digestion is but an alternating and a simultaneous process, and the alternations are not as few as we had supposed. When it

was first found that ptyalin was identical with diastase, and the assumption readily made was that it had always performed this duty. We supposed that the conversion of the trifling amount of starch during the act of mastication was all the duty it performed. Believing that gastric digestion was a simple process, we assumed that acids, and likewise assuming that the hydrochloric acid came from the stomach, and the ptyalin, enzyme, from the stomach, but in fact, that the latter had another equally important duty to perform, the work with a special ferment of the stomach that was identical with the gastric enzyme. The long delay was not all in vain, for we were brought to our senses with our own hands. Ptyalin is not a simple enzyme, it is a complex one, and its action is not limited to the stomach. We were now discovered that it works with much greater vigor in a neutral than in an alkaline medium. We found in the stomach it is alkaline, and that the gastric enzyme that has been so long of waiting's moment. We find, creating, the stomach's structure

* Kirchoff, *Journal*, 1811, p. 100.

† *Ibid.*, 1813, p. 100.

‡ Leuchs, *Monatsschrift*, 1831, vol. 10, p. 100.

§ Payen and Persoz, *Annales de Chimie*, 1833, p. 100.

¶ Musculus, *Monatsschrift*, 1878, vol. 10, p. 100.

§ Brown, Heron, and Morris, *Journal*, 1885, p. 100.

§ *Journal of the Chemical Society*, 1885, p. 100.

§ *Journal of the Chemical Society*, 1885, p. 100.

§ *Journal of the Chemical Society*, 1885, p. 100.

a menace to health. Imperfectly masticated food that has not become sufficiently impregnated with ptyalin is in the same manner likely to sour. A dose of bicarbonate of sodium may bring a momentary relief, but is pretty sure to be followed by a speedy recurrence of the evil. The proper remedy to give where such a tendency is known to exist is a dose of diastase to perfect and hasten digestion. This enzyme is best administered in a thick malt extract where it is found sufficiently concentrated to be of actual worth. But here a danger lurks. Dextrose syrup, under the commercial name of glucose, is only worth from a cent and a half to two cents a pound if bought in large quantities. It is of about the same consistence as a thick extract of malt and could easily be used as an adulterant. A pure malt preparation costs vastly more, so that the desire to mix them is quite tempting to an unscrupulous person. The practical difficulties in the way of detecting such an adulteration are so great that but few would go to the expense or trouble. When the writer had definitely settled upon writing this paper it was resolved that the investigation of the point here raised was important. What would be the use of advocating the advantages of a malt extract to overcome certain evils when the presence of glucose in that very extract would augment the evils sought to be overcome? The easiest way to settle the question was to visit a place where malt extract was manufactured and look out for signs of glucose. Had a factory been near New York where a *low-grade* article was made our choice for a call would naturally have been to it. Fortune did not favor us in this respect. The only manufactory in this part of the country is one having the reputation of supplying the most active diastatic preparation on the market. I visited Yonkers, went to the extensive works of the Maltine Company, and asked to be shown around. On learning who the visitor was the chemist in charge took particular pains to show and explain their various processes. He showed me the barley, wheat, and oats used, the different preparations that they make, and the machinery employed. I examined their vacuum pans, their malt mills with their fine vernier adjustments for cutting, their great stock of coca leaves for making their maltine with coca wine, their agitators, and their bottling machines. He showed me where the glucose was made, and pointed to detectors for its detection. You can see how easily it

We went down into the storage basement and up into the parietal and kept going up one tunnel, fully expecting nothing to happen. I found some anything-or-nothing that indicated the presence of an ancient man. The *Thomson* told me that he had lately succeeded in identifying one part of his work (the question of use from, and whether to the domestic, value of reaction, but an obvious failure). He pointed out a bit from actually a fact and fact from the great value of reaction in a southern, independent of the domestic position. Probably, instead of expression of the value of observation. It contained not only the evidence from the domestic and the search for the observation of already existing and having been. Chemical reaction places it in the form of a digestive agency, and a great possible transformation of its composition fails to reach the present, the present.

THE TREATMENT OF CORNEAL ULCER
BY THE GENERAL PRACTITIONER.*

[illegible]

CORNEAL ulcer, although not necessarily dangerous to the integrity of the eyeball, is nevertheless, even in its simpler forms, fraught with most serious consequences as regards the preservation of good visual acuity. This is especially true where the ulcer happens to be centrally located, as the slightest nebulous opacity formed in the process of healing will seriously affect the power of vision. Unfortunately, the great majority of these cases occur among young children, and if the treatment is not properly applied in the beginning of the attack there will result a limitation of vision that may influence the whole after-life of the individual. In many cases the services of a specialist are not available, because the sudden onset of the attack, or its occurrence in a locality remote from our medical centers, will not permit of any delay in securing relief; and hence, as the general practitioner is, perforce, first called upon to treat these cases, I think a brief *résumé* of the ætiology and proper methods of treatment may prove to be of some interest on this occasion.

For our present purposes we may simply divide all corneal ulceration into two classes: (1) simple ulcer and (2) sloughing ulcer. The latter variety this paper does not propose to discuss. The former may manifest itself under somewhat protean types, but originating in the same underlying cause. We may have the most superficial, grayish ulceration; we may have an indolent, necrotic ulcer that pursues a sluggish course and shows but little inflammatory reaction; we may have a transparent or faecet ulcer; we may have single or multiple erosion ulcers, where there is friction of the lids and perverted ocular secretions; and lastly, we may have the condition known as phlyctenular keratitis. So long as these conditions manifest themselves under the simpler forms, just so long is the general practitioner competent to care for and treat them; but whenever any of these apparently harmless conditions pass into the more dangerous form of sloughing ulcer, or threaten to perforate and injure the integrity of the eyeball, then the

Aside from these local conditions, the general symptoms will present so characteristic a clinical picture that the diagnosis will be easy. The child will usually have intense fear of light, hiding its head in a pillow or in the folds of the mother's dress. The eyes are usually closed, including the lower portion of the lids. The face is pale, the mouth usually closed, the tongue may hang out of the lip. The child may be in the comatose stage, and respond to the mother's voice but not to anything else. There may be a convulsion, or the child may die.

literature of the past few years have possibly noticed the growing tendency to ascribe the origin of corneal lesions to associated disturbances in the lacrymo-nasal apparatus. I think we may safely say that fully ninety per cent. of corneal lesions take their origin directly from pre-existent pathological processes affecting the intranasal tissues and secretions. Careful inspection will almost invariably reveal associated lesions of the eye and nostril of the same side, which is most markedly shown where the disturbance is confined to a single eye and the corresponding nostril.

Constitutional dyscrasie do not count for as much in the pathogenesis as they were once thought to do. A strumous diathesis, of course, lowers the tone of the system, and thereby exposes the eye to these microbic attacks. Unhygienic surroundings and the poor dietetic regimen that usually accompanies such conditions will undoubtedly add a genetic factor to the predisposing cause. While we are convinced that the immediate cause is purely local (lacrymo-nasal), we must not overlook the importance of the more remote cause, which we consider to be a perversion of the gastro-intestinal functions. Chronic constipation, errors in diet, the excessive use of coffee or tea, and over-indulgence in sweets and pastry are the most potent factors. In children, especially, these indulgences sooner or later sap the vitality and create a peculiar irritability of the whole gastro-intestinal tract. By reflex action the nasal condition sympathizes with the disturbance in the stomach, and thus indirectly the train of symptoms may be traced back from the stomach to the eye itself. Accompanying the gastric disturbance is a peripheral vaso-motor relaxation which allows the surface of the body to be constantly bathed in perspiration. This is probably explained by the well-known interrelation of gastro-duodenal lesions to those of the skin; as, for example, duodenal ulcer complicating burn of the skin, or *vice versa*, urticaria from duodenal acidity, and the erythematous manifestations caused by eating strawberries or shellfish.

To return to the local conditions: The ocular disturbance may be purely reflex from the nose; it may result from decomposition of the confined tears from simple obstruction of the duct; or it may originate from the regurgitation of septic secretions which carry the microbes up through the contracted lumen of the lacrymal duct, but do not allow the tears to travel downward, because of the accumulation of viscid secretions in a previously obstructed passage. Granting now the presence of this septic material in the ocular *cul-de-sac*, there is required only a

slight increase in the virulence of the microbe to produce the ulcer.

Even in the exanthematous or other fevers, where the lacrimal duct is not obstructed, there is a tendency to the formation of a corneal ulcer. This is due to the fact that the lacrimal duct is not a simple tube, but a complex structure, the wall of which is composed of a variety of tissues, and is therefore very susceptible to the action of the various poisons which are present in the blood.

As the lacrimal duct is not a simple tube, but a complex structure, the wall of which is composed of a variety of tissues, and is therefore very susceptible to the action of the various poisons which are present in the blood.

ly a large percentage of corneal ulcers are central. If the cause of these central ulcers should be carefully inquired into, there would doubtless be no question as to their lacrymo-nasal origin. The central location of the ulcer may be accounted for by the fact that in the act of winking the eyelids come together over the cornea and carry ahead of them any pathological *débris* which is present, and as they recede leave behind them a *drift* of this septic material lying in the exact center of the cornea. Here it sooner or later causes the corneal tissue to break down into an ulcer. This occurs most frequently in cases where there are mild atrophic lesions of the nose, which are usually accompanied by a peculiar, musty odor of the nasal secretions.

Treatment.—Having thus clearly stated our dictum as to the nasal origin of this affection, the treatment resolves itself into the simple matter of treating the nose, together with the application of a mild, soothing lotion to the eye itself. While making no pretensions to being a specialist in the treatment of diseases of the nose, I am nevertheless constrained to act on this conviction as to the nasal origin of corneal ulcerations and to apply the remedy accordingly.

As to the treatment of the nose, I have found it very necessary to use an alkaline and antiseptic solution to cleanse the nasal chambers. Dobell's solution is valuable for this purpose, but the best form is that known as Dr. Goodman's compound tablet of sodium silicofluoride,* which can be dissolved in water as needed. This solution may be used two or three times a day in a constant spray atomizer. A syringe or bulb nasal douche will be preferable for use in the case of very small children.

The most important therapeutic measure, however, is the local application of compound tincture of benzoin (long known as Turlington's balsam) to the hypertrophied nasal mucous membrane, daily at first, and then on alternate days. My attention was first called to the advantages of this drug by Dr. S. MacCuen Smith some five years ago, and since that time it has proved itself to be, *par excellence*, the one therapeutic agent that will most promptly reduce the turgescent and hypertrophied turbinals, and restore the perverted secretions to their normal condition. It is at once antiseptic, astringent, depleting, and stimulating.

This application is best made with absorbent cotton wrapped on the end of a wire applicator,† dipped into the solution, and inserted far back into the nostril, until the lower portion of the mucous lining is well coated. It is then swept under the lower turbinate as it is withdrawn, in order to help reduce any swelling around the nasal orifice of the lacrymal duct and its terminal fold, known as the valve of Hasner. If the patient is a child, it should be laid upon its back on the mother's lap, with its head between the knees of the physician, when the application can be quickly made. If the pharynx seems much congested, a similar application of the benzoin will facilitate recovery. Of course, if the disturbance arises from any more serious naso-pharyngeal lesion, as polypus, septal spurs, enlarged

* This solution is made by dissolving 10 grains of sodium silicofluoride in 100 grains of water. It is a valuable antiseptic and astringent, and is used in the treatment of nasal diseases.

† This applicator is made by Dr. J. C. Ziegler, of Philadelphia.

tubes of about four centimetres and a half in length and two centimetres and a half in diameter each. These are so constructed as to allow the smaller one to slide into the other. At the far extremity of the anterior and larger tube there is an adjustable cylinder lens that can be made of any desired strength. This lens, which is a centimetre in diameter, is made in such a way that it can be rotated around a degree index which is engraved upon the border of the circumference of the barrel. This index register runs from zero to one hundred and eighty degrees. Just inside of this lens in the tube there is an accurately centered iris diaphragm. The diaphragm, which is perforated, is connected with a graduated screw head that is situated upon the outside of the barrel. The graduations upon the screw head are gauged in such a manner that each index movement represents an increase of one millimetre opening in the center of the diaphragm. More deeply situated in the tube there is a carefully ground biconvex lens of twenty dioptries strength. This lens represents the main focusing apparatus of the contrivance. Fastened to the anterior part of the underneath portion of the barrel there is a sliding arrangement of heavy wire, which, with a small hook at the posterior part of the barrel, makes either a firm base upon which the contrivance can stand or a means by which the apparatus may be suspended.

The wire base is so gauged that when it extends to its greatest length out from the anterior face of the barrel the distance measures about twelve millimetres.

The smaller tube has a double index running the greater part of its length upon its upper face. The indices, starting from zero, run sequentially backward to "6" along an "M" line and forward to the same amount on an "H" line. To the back face of the tube there is an arrangement by which an adjustable flat disc can be screwed into position. It contains a colored representation of the normal fundus oculi engraved upon enameled paper.

This model, which has been constructed upon the principle involved in Queen's student's eye demonstrator, that was made upon the suggestions of Dr. William Thomson, of this city, embraces more of the salient features of the human eye in the least possible compass than any other form of similar contrivance.

Starting with a focal distance of five centimetres, which is marked upon the smaller tube as zero, emmetropia is reached. By gradually withdrawing the smaller tube the exact equivalents of axial myopia are obtained, this being represented by the graduation upon the barrel being exposed upon the tube. By slowly pushing the smaller tube into the larger one the exact equivalents of hypermetropia are obtained. If it is desired to study astigmatism, the eye is rotated in the barrel and the smaller tube is rotated to the focal distance of the eye. By withdrawing the smaller tube the exact equivalents of the astigmatism are obtained. By pushing the smaller tube into the larger one the exact equivalents of the astigmatism are obtained.

upon the circumference of the larger tube. To this astigmatism, supposing it be studied while the fundus level is placed at the emmetropia mark, any degree of ametropia up to the full extent of the instrument's registration can be added, remembering that in the minus series, or those that are designative of near-sightedness, the strength of the cylinder lens used must be subtracted from the amount of the degree of myopia that is registered.* Should desire be had to study the relative elevations and depressions of localized areas in the background of the eye, as, for example, suppositional swellings of the optic disc as found in papillitis, or supposed cupping of the nerve head, as is so often seen in glaucoma, the observer's gaze can be limited to the varying appearances of the optic disc when the tubes are approximated to one another and when they are separated to different degrees. Here the amount of correction that is necessary with the ophthalmoscope to produce proper definition of the optic disc, or, in fact, any other part of the organ that can be so studied when the smaller tube is slid backward and forward in the larger one, can be employed to designate the degree of change of antero-posterior position of the area under consideration from its supposed normal plane.

In this study it should always be remembered that when the tubes are approximated the relative position of the disc, as compared with that when it is situated at the mark which is intended for emmetropia, is equivalent to the projection of an object forward into the chambers of the eye, as in intra-ocular swellings. Further, it must be understood that when it becomes necessary to separate the tubes, the abnormal position is equal to the recession of an object, as, for instance, in pathological cuppings of the optic nerve head.

In the ordinary model the appearance of the supposed normal eye ground is given. If desired, this picture can be used as the basis upon which any one, if an artist, can sketch and paint any variety of pathological change desired. The student is thus enabled at a moment's notice to have proper ophthalmoscopic representations under almost the same conditions as when they are studied from the living subject. The plan, therefore, if carefully tried, will give far better ideas of the true nature of the ophthalmoscopic appearances of intra-ocular changes than in any other form of graphic reproduction. In reality the technique becomes almost the same as when it is done with the patient, and the findings are rendered quite similar to those which have been sought to study. To offer additional difficulties in the work, and thus give much greater ability in afterwork, especially among old subjects, the pupillary opening can be diminished to extremely small areas, and the studies repeated under these circumstances.

Besides giving practice in the frequently repeated technique that is necessary to obtain any degree of expertness in the handling of the ophthalmoscope for the production of proper and adequate results in both of these plans, there

* It is to be noted that the degree of correction of the light is not the same as the degree of correction of the eye, but that the variation from normal is indicated in the correction.

At his request I operated upon him in December, 1889, again assisted by Dr. Manning.

We dilated the rectum and excised a portion of the mucous membrane for about a finger's breadth and three inches long from the posterior wall of the rectum. We then divided the muscular coat almost down to the connective tissue. The cut was afterward kept well dilated by plugs, bougies, etc. The wound healed nicely and without contracting the rectum. The relief obtained by this operation, no doubt, was purely psychical. In the light of ripper experience and by deductions from later data I can not imagine that the operation *per se* at all enlarged the passage or divided a stricture which did not exist, except when spasmodically irritated by the actual passage of feces, or the fear in the patient's mind that he would not be able to have a movement. The desired result from this operation, however, lasted over two years, when he again had trouble from the same cause.

Having exhausted all the resources I could devise, I sent him abroad, where he consulted Professor Kussmaul, of Heidelberg, who advised him to use an enema of hot olive oil, giving him an apparatus with very complicated thermometers, stop-cocks, tubes, lamps, measures, etc., also elaborate directions for use. I have not seen or consulted Professor Kussmaul concerning this case, but I feel sure that he recognized the mental condition and that the elaborate outfit and the minute directions were directed to the psychical elements of the case more than to the purely local condition.

The celebrity of his comforter and the soothing hot oil lubricated both mind and body for a long time (he thinks over a year or more), when the old trouble again returned.

In this dilemma circumstances came to my aid. The death of the hop buyer for the firm (of which his father was the head) caused the patient to be sent in that capacity to the far West—to Washington and Oregon, to spend the greater part of the year in the hop fields and hop warehouses.

During the ensuing two years this employed he was entirely free from his bowel trouble, but contrived to get a new mental trouble, for which he came back to New York after having in vain sought relief from the medical talent in the cities of the far West.

I am at a loss what to call the condition for which he now consults me. The psychical element is evidently again present, for as he approached New York, where he felt he would gain relief, the skin lesion (?) almost ceased to annoy him. This form of peripheral irritation is now the new manifestation of the disease. The patient has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

trace whatever, not even scaling, as one would suppose from the severity of the lesions (?). The burning persists while the redness lasts.

These attacks come at irregular intervals, sometimes a few days apart, again with weeks intervening. The amount of body involved varied: sometimes starting from the perineum it extended bilaterally to both thighs and legs to his feet, so that for one to two days he could not wear his boots. During other seizures the arms and shoulders were involved, sometimes bilaterally at others on a single side. One of the most frequent sites of selection, however, has been one beginning at a point under the left eye extending in an upward and backward direction rather than downward, so that the eyelids, the superciliary region, and the cheek and ear have been so swollen that the eye was closed. Another favorite "initiative point" was from the upper lip, which swelled so rapidly and enormously as to make the face look like a huge snouted beast, almost closing the nose and mouth. The only attacks I have seen have been of the left eye and of the mouth; also one small involvement of the skin on the internal surface of the left thigh; all these, however, in a lesser degree than above described.

The patient tells me that the physicians he consulted in the West were confident that the disease was erysipelas, and gave local and constitutional treatment for the same. The only relief he had from the sensory symptoms was from the use of a lotion of chloroform and hydrocyanic acid. Since he has been under my care for this last manifestation of nerve irregularity I have given the case considerable thought, as I was puzzled to know whether this last trouble was from local irritation or from trophic disturbances, since the rectal spasm was evidently of purely nervous origin.

In treatment I took the precaution to apply local remedies in case the disease should be from spores.

I remembered, when he gave me the history of the skin trouble, to have seen in the *American Journal of the Medical Sciences*, about the year 1886 or 1887, a description of a skin lesion called by the writer angio-neuro-œdema. I thought this name applicable to this case and so called it in my notes. I have looked in Dr. Foster's dictionary but do not find this word.

In Pepper's *System of Medicine*, vol. v, p. 1253, under the head of Vaso-motor and Trophic Neuroses, there is a brief mention of similar conditions of the skin and of allied diseases. As before mentioned, the patient has been in the hop business for a number of years. His occupation has brought him constantly in contact with masses of dried or fresh hop buds, in the warehouses or in the hop fields.

The test of the hop, I understand, is the color and smell to an experienced eye and nose. I have asked myself the question in regard to this case, if the lupulin odor or pollen could have any connection with the trophic spasm or vaso-motor disturbances in accounting for this man's condition.

Considering the case in this light, I ordered him to buy fresh underclothes and to completely discard all clothes and articles that he had used in the West, to bathe in a bichloride solution, and to use ichthyol-sublimite soap. Internally, Hamilton's tonic, conjointly with the use of spinal douches given by a syringe at the temperature of the rectum and temperature of the rectum, and giving him a glass of water.

These methods, combined with the mind-cure, have relieved the patient of the skin trouble, and he is now well.

The patient has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years. He has been in the hop business for many years, and he has been in the hop fields and hop warehouses for many years.

THE NECESSITY OF PROMPT OPERATIVE TREATMENT IN APPENDICITIS.*

By JOHN B. WHEELER, M. D.,
BURLINGTON, VT.

MR. PRESIDENT AND FELLOWS OF THE BOSTON CLINICAL SOCIETY: The object of this paper is to earnestly recommend *prompt operative interference as the safest and best treatment for appendicitis*, as the surest means of avoiding the dangers to which a patient is exposed by the disease.

The principal dangers from appendicitis are:

1. *General Peritonitis*.—This may result directly from perforation of the appendix, or, if an abscess forms, it may rupture into the peritoneal cavity and thus cause a general inflammation. In the first case the peritonitis immediately follows the first symptoms of trouble. In the second, it may occur at almost any period of the disease. In either the result is almost invariably fatal.

2. *Suppuration*.—Even if pus does not invade the peritoneal cavity, it may penetrate the parietal peritoneum and come to the surface, or burrow anywhere and everywhere in the retroperitoneal connective tissue, causing all the evils attendant upon chronic suppuration. Or it may perforate the intestines, the rectum, the bladder, or the vagina. These cases, though not directly fatal, in many instances end in death, in many others in chronic invalidism, sometimes associated with fecal fistula; while those which recover do so after a long and tedious convalescence, and are liable to a return of the disease with all its dangers.

3. *Recurrence*.—In many cases which recover without operation, where no pus has formed, or where it has formed and has been absorbed, the appendix is left in a state of chronic inflammation, or so distorted and compressed by adhesions that its vitality is impaired. In either case the patient is subject to recurrent attacks of acute inflammation, which are liable to lay him up at any moment, rendering it impossible for him to place any dependence on his physical condition, and putting his life in peril over and over again.

Now, although many cases of appendicitis recover without any of these complications, we have no way of telling at first which cases will do so and which will not, except in those taking no attack before the immediate onset of general peritonitis, showing that the peritoneal cavity had at once infected, and that there is every probability of a fatal result. A case may seem mild enough for a week or three, and then suddenly show symptoms of suppuration, or it may show no signs for days, without any special features of the process, and then discharge into the peritoneal cavity. It is this uncertainty of the disease, which calls for prompt operation. Numerous failures have followed the delay in operation in such conditions, which, if they had been seen, greatly increase the difficulty of the operation and increase the danger of the disease.

By a prompt operation, I mean an operation which is done

as the diagnosis of appendicitis is satisfactorily established. Such diagnosis usually is not hard to make. When a sudden and severe attack of abdominal pain, accompanied or closely followed by vomiting, is succeeded, after a shorter or longer interval, by tenderness in the right iliac fossa (usually greatest over McBurney's point), rigidity of the right abdominal muscles, and rise of temperature (perhaps very slight), it means appendicitis. If we also find a tumor in the right iliac fossa, the diagnosis is emphasized. Cases sometimes occur in which the symptoms are very obscure; but, as a rule, the presence of the above-mentioned group is sufficiently evident. Of course, as has been said, many well-marked cases get perfectly well under medical treatment, without complications or subsequent recurrence; but under medical treatment a good many more are left with chronically inflamed and adherent appendices, subject to annoying and dangerous recurrent attacks, while others develop abscesses, whose dangerous consequences have already been mentioned. Finally, some twenty per cent. of medically treated cases die; and let it be repeated that at the outset it is impossible for the most skillful diagnostician to say which course a given case of appendicitis will take.

Now, as the dangers of appendicitis are due to the presence of the diseased appendix, it is evident that they can be prevented if the appendix is removed early enough. By such a procedure the dangers of the disease are exchanged for those of the operation. The dangers of the operation are death and hernia, both of which are common enough when the operation is done in the later stages of the disease. The prompt operation, however, has about the same mortality as the ordinary exploratory laparotomy—i. e., less than five per cent. The causes of death after appendicitis operations being shock and sepsis, the prompt operation affords the best means of avoiding them, because it is done when the patient is in the best condition to withstand shock and before septic material has time to accumulate. At such a time the appendix is easily found and removed, because it is not buried in adhesions and bathed in pus, as is the case at late operations. As for hernia, that complication often follows a late operation, where a large abscess cavity is found which has to be kept open and drained for many weeks. But, after the prompt operation, where the incision is short and can be firmly closed throughout its length by different layers of buried sutures, hernia is almost unknown.

The late operation is really an operation for the results of appendicitis, and not for appendicitis itself. As some cases are not seen until the results are well under way, we are sometimes forced to operate late. If at all. But we must remember that the difficulty here is not the disease itself, but the ignorance of the disease. The late operation is really an operation for the results of the disease, and not for the disease itself. It is an operation which is done when the patient is in the best condition to withstand shock and before septic material has time to accumulate. At such a time the appendix is easily found and removed, because it is not buried in adhesions and bathed in pus, as is the case at late operations. As for hernia, that complication often follows a late operation, where a large abscess cavity is found which has to be kept open and drained for many weeks. But, after the prompt operation, where the incision is short and can be firmly closed throughout its length by different layers of buried sutures, hernia is almost unknown.

* Read before the Boston Clinical Society, January, 1894.

næum. Of course, we often find suppuration accompanied by the usual signs, and yet a general purulent peritonitis may exist with little or no rise of temperature, or a considerable abscess may form in the right iliac fossa without an chill or marked fever. Another reason for not waiting for signs of suppuration is that perforation often takes place before suppuration. Many operations have been done where the symptoms were not urgent, but where, nevertheless, a gangrenous appendix was found, just on the point of perforation into the peritoneal cavity. And, even if we could diagnosticate with certainty the existence of pus, why should we postpone operating until the patient gets into a condition where the operation is far more dangerous than it was at first? The danger of sepsis is much greater in the presence of pus than in its absence, and the danger of operating in the presence of the results of appendicitis—such as suppuration, adhesions, peritonitis, and sepsis—is much greater than when the operation is done for appendicitis alone, before the results have had time to materialize.

If the rule to operate as soon as the diagnosis is made is always followed, some patients will be operated on who would have recovered perfectly without operation. If medical treatment is always followed, a much larger number of patients will die who would have been saved by prompt operative interference. Moreover, the recovery list of the medically treated cases will include many which afterward recur. If we reserve operative interference for cases whose symptoms imperatively demand it, we shall now and then lose a patient whose appendix has carelessly neglected to display danger signals before perforating or suppurating.

The report of the following case, on which I operated nineteen days ago, is interesting as showing what serious lesions may exist when the symptoms are not severe :

[illegible]

The patient was taken to the Mary Fletcher Hospital and, after a consultation of the staff, an operation was performed at 3.30 P. M., about fifty-seven hours after the appearance of the first symptom. All the consultants agreed to the operation, but some thought that, in view of the mildness of the symptoms, there would be no harm in waiting longer. In point of fact, there was not a severe symptom about the case, especially when we consider that the patient had had no opiate except the two grains of opium which he had taken thirty-six hours before the operation. But he had a fairly typical history of appendicitis, and on this day had begun to show the combination of tenderness in the right iliac fossa, greatest in the region of McBurney's point, with rigidity of the right abdominal muscles. A tumor also was beginning to form. On operating, a short, inflamed, thickened, adherent appendix was found, turned upward under the external half of the colon, gangrenous in several places, and with two perforations near the tip from which faecal matter was just beginning to exude. The appendix was only partly walled off from the peritoneal cavity. It lay at the bottom of a shallow cup, which would soon have overflowed. It was removed and was found to contain two faecal concretions of about the size of small peas. The patient's temperature dropped to 99° the next morning and to normal the morning after, where it has remained ever since. His recovery has been uninterrupted. He has been sitting up for several days and will begin to walk about to-morrow.

Now, here is a case for which, if the symptoms could have been trusted, medical treatment would have been all that was required. And yet this patient, whose highest temperature was only 102°, and who, without any abdominal distention, had only a very moderate amount of pain, right iliac tenderness and rigidity, and a little ill-defined swelling just beginning in the right iliac fossa, had a gangrenous, perforated appendix and was in imminent danger of his life.

The objection to prompt operating is that it occasionally involves an unnecessary operation. The objection to postponement of operation and to medical treatment is that they frequently involve an unnecessary death, to say nothing of the matter of recurrence. The first combination seems to me the preferable one. We often see cases where we sincerely regret that no operation was done, or that the operation was not done earlier. But I have yet to hear of a case of appendicitis where the surgeon was sorry that he had done a prompt operation.

A patient with an inflamed appendix is in much the same condition, so far as danger is concerned, as a child who is playing with a loaded revolver. If it explodes and kills him, it is not much of an excuse to say that you did not take the thing away because you did not suppose it was loaded.

The Death of Dr. Reid Alexander, of Topeka, Kansas, a member of the Marine Department of the University of Pennsylvania, died at 125 West Third street on October 8th, of perforation of the bowels, at the age of thirty-three years, eleven months. At the time of his death Dr. Alexander was the president of the Trans. Section of Medicine and Surgery. During the nine years of his active professional life in Topeka he had built up one of the finest hospitals in existence in the State, and enjoyed the honor and respect of both the profession and the laity.

entirely reconstructed since 1860, and that now we had come to regard inflammation of the pelvic peritonæum as generally symptomatic of disease of the ovaries, or Fallopian tubes, or both. Mr. Tait, within the last ten or twelve years, together with men who had worked abreast of him—some of whom were members of this association—had driven out the theory of pelvic cellulitis that for so long had held sway, and now perimetritis and parametritis had been dropped from the gynecological vocabulary. The struggle had been a long one, but abdominal surgeons had demonstrated the truth of this proposition—viz., that pus originating outside of the tubes or ovaries in the non-puerperal state was a very rare thing. The largest number of women in the consulting rooms of gynecologists were those suffering from pelvic inflammation or its residues; hence the importance of the subject under discussion could not be overestimated. But he asserted that it was only within the past seven or eight years that anything like uniformity of opinion as to the causes and proper treatment of pelvic inflammation had been reached. Now, just as we were beginning to agree as to the essentials governing these cases, we were told by a number of gentlemen, who called themselves conservatives, that these diseases did not demand operation, but that they could be cured in most instances by tentative measures—such as diet, rest, electricity, and the like. By denouncing the work of abdominal surgeons as unnecessary mutilation, and stigmatizing it as castration or unsexing women, they had created a panic among the medical journals that was reaching far into the ranks of the profession. The effect of this was to turn back the wheels of time and stay the advance of progress, with harmful results to suffering women. It must be admitted that these so-called conservative men were clever, which made their subtle and dangerous doctrine all the more damaging in its results.

Dr. C. A. L. REED, of Cincinnati, discussed the clinical history of inflammatory disease of the uterus and appendages and of the pelvic peritonæum; Dr. L. S. McMurtry, of Louisville, the causation and pathology; Dr. James F. W. Ross, of Toronto, the diagnosis and prognosis; and Dr. M. Rosenwasser, of Cleveland, the treatment, along with Dr. A. Vanderveer, of Albany, Dr. J. Henry Carstens, of Detroit, and Dr. Joseph Price, of Philadelphia.

Pus in the Pelvis and Abdomen; its Diagnosis and Treatment.—Dr. JOSEPH HOFFMAN, of Philadelphia, read a paper on this subject, in which he stated that pus in the peritoneum and in the pelvic cavity had been treated and cured both by conservative and by operative means. He also stated that in the former category, it was the most curable of all diseases. He then read a number of cases in which pus in the peritoneum, in the pelvic cavity, in the appendix vermiformis, the tubes and ovaries, the liver, the pancreas, and the spleen. Each case should be treated according to its nature. If it was found that the pus was in the peritoneum, the treatment should be conservative, and if it was found that the pus was in the pelvic cavity, the treatment should be operative. The paper was well received, and the author was called upon to read a paper on the treatment of abscesses of the peritoneum.

Hysterectomy for Cancer of the Uterus was the subject of a paper read by Dr. J. H. McMurtry, of Louisville.

Personal Experience with Pus-tubes; when to Operate, how to Operate, and the Results of Operation.—This paper was read by Dr. J. H. McMurtry, of Louisville.

Congenital Diaphragmatic Hernia.—Dr. H. T. MacCall, of Cincinnati, read a paper on this subject, in which he stated that he had operated on a case of this disease, and that the result was successful.

A New Operation for the Radical Cure of Inguinal and Femoral Hernia.—Dr. J. H. McMurtry, of Louisville, read a paper on this subject, in which he stated that he had operated on a case of this disease, and that the result was successful.

of Cincinnati. The operation which the author had devised was as follows: The incision in inguinal hernia was made from a point two inches above Poupart's ligament, midway between the anterior superior spinous process of the ilium and the spine of the pubis, obliquely downward and inward as nearly as possible consistent with the access of the inguinal canal to a point at the base of the scrotum. The dissection was then carried into both scrotal and pelvic cavities. The protruding viscera were reduced and carefully inspected after being brought out above. The sac was carefully dissected from its scrotal connections and reversed by invagination. It was then opened by two incisions, one toward the pubes, the other toward the ilium, thus making an anterior and a posterior flap. The cord was dissected loose and placed in the canal and denuded of its peritonæum at its outer angle. The internal ring was closed by several interrupted sutures, these sutures being applied beneath the peritoneal flaps formed by splitting the sac, care being taken that, in the closure of the ring, undue pressure should not be brought to bear upon the cord. The posterior peritoneal flap was now excised, the stump being ligated if there was any necessity for doing so. The anterior flap was carried across the now obliterated internal ring and stitched by interrupted sutures to the posterior parietal peritonæum. The external ring was closed by passing a number of sutures through its pillars externally to the cord, which was fixed in the internal (pubic) angle of the outlet of the canal. The incision into the abdomen was closed by interrupted figure-of-eight sutures, the internal loop embracing the peritonæum and the aponeuroses of the transversalis and of both oblique muscles, and the external loop embracing the superficial fascia, fat, and skin. These sutures should not be more than three quarters of an inch apart. The incision into the scrotum might be closed in the ordinary way. Drainage should not be employed except in the presence of marked oozing or obvious infection.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The President, Dr. J. EWING MEARS, of Philadelphia, in the Chair.

(Continued from page 54.)

Methods of Teaching Surgery was the title of a paper by Dr. JOHN S. BILLINGS, of the army. There were two classes of students, he said: 1. Those who were presumably to become general practitioners. 2. Those who wished to specially fit themselves for surgical work. For the first class the work should be divided between the professors of pathology, of surgery, and of clinical surgery and demonstrations. Such students should be taught diagnosis and the best methods of treatment of the injuries and surgical diseases which the general practitioner was oftentimes called upon to treat.

Turning up the question, "How are these subjects to be taught?" he found that there were five principal methods: 1. The lecture system. 2. The demonstration system. 3. The practical system. 4. The system of instruction in the amphitheater, and 5. The system of instruction in the ward and clinic.

In the lecture system the professor of the subject of surgery should be the principal teacher, and should be assisted by the professor of anatomy, and also by the teacher of clinical surgery. At the present time, in a large medical

school, the subject of surgery was subdivided among a number of teachers, and under these circumstances the difficulty was to avoid useless repetitions and embarrassing contradictions, and at the same time cover the whole field of surgery. There should be a professor of pathology, and the relations between him and the surgeon should be intimate and friendly, while each should be independent of the other. As regarded the teaching of surgical anatomy by a teacher distinct from the professor of surgery and the professor of anatomy, there was considerable difference of opinion.

Clinical teaching was the most attractive to the average student and was often the most useful to him, because he remembered it better, but, as a rule, clinical material was not available to cover the whole field, and it was therefore necessary to add some systematic didactic teaching. This didactic teaching might cover the whole field, the clinical teaching illustrating the didactic lectures. In this way the student had the benefit of the repetition. Undoubtedly the more clinical instruction of the right kind that could be given, the better for the student and for the school. There was no doubt as to the great utility and popularity of teaching to small sections or ward classes. In employing this method care must be taken that the people did not get the idea that in a teaching hospital the interests of the patients were not as fully consulted as they should be.

Recitations and quizzes were excellent methods of teaching for the majority of students, but were well adapted only to small classes. It appeared more desirable that they should be applied to the clinical teaching than to the didactic lectures.

In the clinical and didactic lectures too much of the history and literature of surgery should not be included, but every school should have a course of lectures on these subjects, including bibliographical methods.

The man who intended to be a surgeon should not only make a special study of surgical anatomy, but do a considerable amount of practical laboratory work in bacteriology, pathological histology, and experimental pathology and physiology. Much of the experimental anatomy could be learned on man, but much of it required work on the cadaver with frequent repetition. Of great importance was residence in a hospital.

The author suggested that perhaps too much time was devoted to dissection and general anatomy here in the case of the study of anatomy. The study of anatomy should be kept up throughout the course and made to figure in the final examination.

In concluding the author asked: "Would it not be good policy for a first class popular medical school to limit the number of pupils who will accept the honors to the first class proper restriction in laboratory work, in practical anatomy, and in study of anatomy and physiology?"

The Teaching of Surgery is the title of a paper read by Dr. John B. Peckham at the meeting. He thought the subject was too large to deal with in one paper, the general subject he chose to discuss, and the practical question relating to the subject he dealt with in a separate paper.

The teaching of surgery resolved itself into two heads: 1. The teaching of the principles of surgery, and 2. The teaching of the practice of surgery. The first head was the more important, and the second head was the more practical. The teaching of the principles of surgery should be given in a systematic way, and the teaching of the practice of surgery should be given in a practical way. The teaching of the principles of surgery should be given in a systematic way, and the teaching of the practice of surgery should be given in a practical way.

It is not the object of this paper to discuss the question of the teaching of surgery, but to discuss the question of the teaching of surgery.

who held these views could never have known the stimulus of speech; could never have felt the electrical impulses passing between hearer and speaker. The method of teaching surgery in Edinburgh was then described. In conclusion, the writer wished to add a word with reference to the teacher of surgery. He believed in a fallow time; in a time of rest from mental activity. The best rest was change of scene. He suggested the advantages that would accrue from an interchange of chairs in the great English-speaking educational centers. In this way once in seven years a teacher would for a season leave his alma mater and speak to the students of another school. Or the fallow time might take another aspect: give a teacher a session off every seven years and let him do in it what seemed to him good.

(To be continued.)

Miscellany.

The New York Academy of Medicine.—At the last general meeting on Thursday evening, November 1st, a paper on Intralobular-Occlusion Jaundice was to be read by Dr. William H. Porter.

At the next meeting of the Section in Paediatrics, on Thursday evening, November 8th, cases will be presented and a paper on the Antitoxine Treatment of Diphtheria, based upon a Series of Cases Treated at the Willard Parker Hospital, will be read by Dr. A. Campbell White.

At the next meeting of the Section in General Surgery, on Monday evening, November 12th, patients will be presented, and Dr. Royal Whitman will exhibit pathological specimens and apparatus. Dr. Francis H. Markoe will read a paper entitled, A Clinical Contribution to the Surgery of Intestinal Obstruction, and Dr. Willy Meyer, a paper on An Improved Method of the Radical Operation for Carcinoma of the Breast.

The Health Department and the Prevention of Infectious Diseases. This paper, read by Dr. Thomas M. Biggs and Dr. A. H. Doty, was approved by the Board of Health of the City of New York at a meeting held September 27, 1894.

We desire to direct the attention of the Board of Health to the necessity for the adoption of some more adequate means to prevent the extension of contagious disease in tenement houses and apartment houses, and particularly for the enforcement of isolation of persons sick with these diseases. The methods which have been long employed in the Health Department—i.e., frequent visitation and instruction by department inspectors—have been found to be inadequate. It is suggested that the members of the Board of Health should be authorized to visit the families of the sick persons, and to see that the isolation of the sick is properly enforced, and that the members of the Board of Health should be authorized to visit the families of the sick persons, and to see that the isolation of the sick is properly enforced, and that the members of the Board of Health should be authorized to visit the families of the sick persons, and to see that the isolation of the sick is properly enforced.

Further than this, this method fails entirely to protect strangers or visitors who may go to the house or apartment. Ladies in search of servants have been repeatedly found in houses or in apartments where cases of contagious disease were present, and servants who have been living with families where there are cases of contagious disease, on obtaining situations frequently go to their employer's house carrying infection with them; or, when relieved from duty for an afternoon or evening, visit families where there are cases of contagious disease and not infrequently carry infection back to the houses in which they are employed. Very commonly washing or various kinds of sewing is secretly done by other members of the family in apartments where such cases are ill, and the garments thus infected on the premises are later returned to the owners. In small shops business is sometimes carried on, and in one of several instances recently a number of cases of diphtheria were directly traced to an infected candy store.

Notifying inmates of the house is ineffectual further, because it has been found that, as a rule, intercourse of families in tenement houses is not with others in the same house but with families which live in other houses, and the latter are entirely unprotected by the methods at present followed.

It has seemed to us after careful consideration of this subject that the desired object would be best obtained by the placarding of apartments in tenement houses where cases of contagious disease exist, and we therefore have the honor to recommend that hereafter the chief inspector of contagious diseases be authorized, at his discretion, to placard apartments in tenement houses where there are cases of contagious disease. The following considerations may render still more apparent the necessity for this action:

1. Under the present conditions it is impossible to prevent strangers and visitors from entering apartments where there are cases of contagious disease, and they or their clothing thus frequently become infected and either they contract the disease themselves or they transmit it to others. These strangers or visitors are usually not aware of the existence of disease in the house or apartment, and unwittingly expose themselves and act as media for the dissemination of the disease. If apartments were placarded, this means of dissemination would be prevented.

2. In diphtheria, as has been repeatedly and abundantly shown by the investigators of this department, patients are often apparently well long before they are free from the infection, and in the case of repeated warning from department inspectors these patients, especially when children, mingle with other children and thus transmit the disease to them. This is especially true in the case of diphtheria, and is an important means for the dissemination of diphtheria and it is of no less importance in scarlet fever and measles, as in the latter diseases desquamation frequently continues some days after the patient has apparently recovered.

3. There are at present no means by which other inmates in tenement houses can be notified of the existence of contagious disease in their apartments. They are only notified by the department inspectors, and we have seen, and doubtless many others have, cases of contagious disease in tenement houses where the department inspectors called and the disease was not reported.

4. The present method of notifying the public of the existence of contagious disease in tenement houses is by the publication of notices in the *New York Herald*, and by the posting of notices in the tenement houses. This method is not only inefficient, but it is also a source of annoyance to the public.

ors, assisted by the sanitary police, to enforce the isolation of children convalescing from diphtheria and scarlet fever after the serious symptoms have disappeared. It is undesirable at such times, unless absolutely required, to remove such patients to the hospital, and yet in the eruptive fevers this is the period of the disease when there is greatest danger of transmission to others.

During the last year we have had a serious epidemic of diphtheria to deal with. The number of cases reported weekly during the last months, however, has steadily decreased. The schools have just now opened, and it seems to us that the most strenuous efforts should be made to prevent a new outbreak of the disease or its reintroduction to the schools. This measure would be of undoubted service in accomplishing the desired object.

We would recommend, therefore, that placards should be nailed to the outside doors of the apartments in which cases of contagious disease are present, when in the judgment of the chief inspector of contagious diseases this course seems to be desirable, and that the placards should bear the following inscription, differing as to the name of the disease in question and as to color. The color for diphtheria should be white; for scarlet fever, red; for measles, blue:

"Diphtheria.—All persons not occupants of this apartment are notified of the presence of diphtheria in it, and are warned to avoid entering it until this notice is removed. The persons sick with diphtheria must not leave the apartment as long as this notice remains here.

"The removal or defacement of this notice is forbidden.

"By order of the Board of Health,

"President,

"Secretary."

For some months in certain classes of tuberculosis the system of placarding apartments has been authorized and employed by the Health Department, and has proved very satisfactory in the attainment of the object desired. The only objection apparently to be urged against this measure is that the inmates of the apartment may object to the publicity thus entailed. This, however, is exactly the object which the measure is justly and properly designed to subserve, and is, in our opinion, the strongest argument in favor of its adoption.

Ergot of Rye as an Oxytocic.—In the September number of the *Bristol Medical and Surgical Journal* there is an article on this subject by Dr. J. G. Swayne, of London, who remarks that ergot of rye is a remedy whose powers as an oxytocic were formerly much believed in and overestimated. Of late years, however, in this respect, it has gone out of favor, and is now seldom employed until after labor, in order to check hemorrhage. This disuse of ergot during labor has arisen principally from two causes. The first of these is that, when given before delivery, as it was formerly, it was very much abused. Lament and incompetent practitioners were in the habit of giving it to hasten tedious labor that was occasioned solely by the presence of some mechanical obstacle. The second cause of the disuse of ergot during labor is that at the present day obstetricians have learned that in the forceps they have an ally that is much safer and more efficient, because it is completely under their control. There are exceptional cases, however, says the author, especially those of simple deficiency of uterine action, in which ergot supplies this natural deficiency, and he remarks that he has seen it employed successfully in a case of this kind.

The author further remarks that the pain induced by the use of ergot is not so much due to the natural pain which

assured place as a man of scientific education, undoubted learning, and equally undoubted literary genius from all temptation to medical or linguistic display. From this position, with the conscientiousness of the skilled workman and the unpremeditated charm of the poet, he poured out broad lessons of human sympathy and preached a genial, yet shrewd, gospel of kindness."

In an obituary notice published in the *British Medical Journal* of the same date the following passages occur:

Of his poems (*Songs in Many Keys, The Iron Grate, Lucifer the Curfew*, etc.), and of his novels (*Elsie Venner, The Guardian Angel, and A Mortal Antipathy*) we have not space to say more than that they all display the graceful felicity and distinction of style, agility of thought, and playfulness of fancy which are his most striking characteristics as a writer. It is his medical rather than his 'belletristic'—if we may use a word with which Mr. Andrew Lang has enriched our language—writings which concern us here.

"In 1838 he gained the Boylston Prize by a dissertation on intermittent fever, and he subsequently won two more of these rewards. In 1842 he made a vigorous attack on the Hibernian heresy in *Hibernia, Heresy and its Kindest Relations*, which is still well worth reading. In 1843 he wrote an essay entitled Puerperal Fever a Privato Pestilence, which is his most valuable contribution to medical science. This paper was read before the Boston Society for Medical Improvement on February 13, 1843, and was published by request of the society in the *New England Journal of Medicine and Surgery* for April of the same year. In this essay Wendell Holmes formulated the following conclusions, based on his own experience in obstetrical practice :

"1. A physician holding himself in readiness to attend cases of midwifery should never take any active part in the post-mortem examination of cases of puerperal fever.

2. If a physician is present at such autopsies, he should use thorough ablution, change every article of dress, and allow twenty-four hours or more to elapse before attending to any case of midwifery. It may be well to extend the same caution to cases of simple peritonitis.

"4. Similar precautions should be taken after the autopsy or surgical treatment of cases of erysipelas, if the physician is obliged to unite such offices with his obstetrical duties, which is in the highest degree inexpedient."

144. On the occurrence of a single case of puerperal fever in his practice, the physician is bound to consider the next female he attends in labour unless some weeks at least have elapsed, as in danger of being infected by him, and it is his duty to take every precaution to diminish her risk of disease and death.

NOTE. If within a short period two cases of mumps occur together close to each other in the practice of a medical physician, the disease not existing or prevailing in the neighborhood, he should at once be reminded of the different vaccine for at least one month, and cautioned to free himself from any other vaccine (live and inactive) between the next spring. Close with him.

1994). The acceptance of these measures among managers in the provision of an information system adhering to the high standards of the ISO 9000 certification scheme is being followed by the introduction, in parallel, of a continuous flow in the material management.

—V. It is the aim of the physics faculty every year, one that the financial aid be provided by means of other students, by making good students, including those, and giving them a series of more supported means of support.

have heretofore been the ignorant causes of so much misery, the time has come when the existence of a *private pestilence* in the sphere of a single physician should be looked upon not as a misfortune but a crime; and in the knowledge of such occurrences, the duties of the practitioner to his profession should give way to his paramount obligations to society.'

"It may, therefore, with justice be claimed for Holmes that he was the pioneer in the field of antiseptic midwifery in which Semmelweis afterward did such splendid work. It may be added that Holmes came in for his full share of the ridicule and abuse with which the medical profession has so often rewarded the preacher of a new truth. More fortunate than Semmelweis, however, Holmes could afford to despise the outcry which followed the publication of his paper. It was reprinted with some additions in 1855 and again in 1883 and 1892. Among his other medico-scientific writings may be mentioned *Currents and Counter-current in Medical Science* (1861), *Border Lines of Neurology* (1869), *Medicine in the Treatment of Mental Disease* (1877), *Physiology of Vegetation and the Nervous System* (1880), and several scattered lectures and addresses. He was specially interested in optics and microscopy, and in vol. iv of the *Proceedings of the American Academy* there is a very interesting paper by him on Reflex Vision. He also suggested some practical improvements in the microscope.

What Holmes was as a professor can not be told better than in the words of President Eliot, of Harvard, at the congratulatory 'Breakfast' already referred to. He said:

"It seems to me that it is my duty to remind all these poets, essayists, and story tellers who are gathered here, that the main work of our friend's life has been of an altogether different nature. I know him as the professor of anatomy and physiology in the Medical School of Harvard University for the last thirty-two years, and I know him to-day as one of the most active and hardworking of our lecturers. Some of you, gentlemen, I observe, are lecturers by profession, at least during the winter months. Dr. Holmes delivers four lectures every week for eight months of the year. I am sure the lecturers by profession will understand that this task requires an extraordinary amount of physical and mental vigor. And I congratulate our friend on the weekly demonstration of that vigor which he gives in our medical school. Most of you perhaps have the notion that Dr. Holmes chiefly enjoys a pretty couplet, a beautiful verse, an elegant sentence. It has fallen to me to observe that he has other great enjoyments. I never heard any other mortal exhibit such enthusiasm over an elegant dissection. And perhaps on think it is with the pen that Dr. Holmes is chiefly skillful. I remember that his paper on the eye was a masterpiece of scope. And I think that none of us can understand the meaning of the words of Dr. Holmes—'I would have been a poet if I had the gift.' The entire work of the past twenty-four hours has been a practical illustration of the truth of those words. He has not a single word to say about poetry or literature. He has not a single word to say about the common sense of the world, and the common sense of the hour. He has not a single word to say about the things that we see and feel around us; but to describe it with a fascinating precision and enthusiasm. What a grand and powerful illustration of the power of the intellect! Now, gentlemen, I leave you to your own reflections. I do not wish to say anything more than that I am sure you will find in Dr. Holmes's lecture a new and noble example of the power of the intellect. And I am sure that you will find in Dr. Holmes's lecture a new and noble example of the power of the intellect."

teacher." . . .

is then washed with an antiseptic solution, the parts are manipulated, dried, and rubbed with a sixty-per-cent. ointment of ichthyol. Finally, a layer of this ointment is applied and covered with cotton. These frictions with ichthyol should be continued for several days after the fever has disappeared. Ichthyol exercises a more powerfully destructive action on streptococci than carbolic acid.

Oehner combined pure alcohol with ichthyol, and painted the diseased parts three or four times a day; during the night the ichthyol was used in the form of an ointment. The local process was immediately arrested, and the temperature became normal in twenty-four hours.

Vasquez simply used compresses of iodine and alcohol below the diseased parts, together with the following ointment: Ichthyol, from 60 to 120 grains; lard, 450 grains.

Haeter advocated subcutaneous injections of carbolic acid, which should be made in the healthy skin at a distance of from one to two centimetres from the erysipelatous swelling, and the diseased parts surrounded with injections from three to six centimetres apart. Over this a sheet of cotton is to be placed. From thirty to forty-five centimetres may be injected at a time. The fever falls and the redness disappears in from twelve to twenty-four hours. The injections are painful and may be followed by small abscesses, and symptoms of intoxication may also result.

Hayem employed a solution of equal parts of carbolic acid and alcohol without causing any pain, but if the carbolic acid is in excess it produces persistent cicatrices.

Trapeznik prescribed a mixture of sixty grains of carbolic acid and three ounces of oil of turpentine.

Rathie employed a mixture containing carbolic acid, tincture of iodine, alcohol, and glycerin.

Wilke used injections of sodium sulphocarbonate, and Petersen used salicylic acid in the same way.

Le Gendre employed subcutaneous injections of boric acid in a one-per-cent. or in a one-in-fifty solution. Two circles of injections are made, the first from three to four centimetres from the erysipelatous marginal swelling, and the second three centimetres beyond the first.

Reckl made two series of incisions on the erysipelatous swelling half a centimetre apart and crossing at right angles. The point of intersection should correspond to the limit of the patch. Afterward it is covered with compresses saturated with a solution of corrosive sublimate, which are renewed three times a day. Recovery is very rapid, but unfortunately it is often necessary to resorb the pus, and furthermore the treatment sometimes leaves visible cicatrices.

Other writers, says the author, may be added to this list, but it is better to make a choice, and he thinks that the preference should be given to a combination of the spray with compresses, or to the carbolic acid painted dressing, or to the method. At the same time emollient fomentations and unobstructed evacuation of the bowels are to be maintained, and the diet should be strictly liquid for some time.

The Employment of Sodium Bicarbonate in the Treatment of Diseases of the Stomach.

There is no doubt that the employment of sodium bicarbonate in the treatment of diseases of the stomach is one of the most important and successful methods at our disposal. It is a well-known fact that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal. It is a well-known fact that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal.

ence on the digestion, says the author, Jaworski, Gegel, and Abend maintained that it increased the acidity of the gastric juice. Du Mesnil also arrived at the same conclusion. Hayem employed Winter's procedure, which tended to show that sodium bicarbonate might increase or diminish the acidity of the gastric juice, according to the dose administered and the time at which it was given. Small doses before meals cause an increase, while large doses taken after meals considerably weaken the acidity. In 1893, M. Linossier and M. Lemoine presented a very important paper to the *Académie* on the action of alkalies on the digestion. Their conclusions, based on a large number of analyses, were important, and M. Dujardin-Beaumetz gives the substance as follows: 1. Sodium bicarbonate excites gastric secretion. 2. When the dose is small, the increase of acidity is slight and variable. 3. When it is a medium dose, the increase of hydrochloric acid is considerable. 4. When the dose is large, the period of excitation is prematurely arrested. 5. The excess of hydrochloric acid varies according to the doses, reaching its maximum with small doses in two hours, with medium doses in three hours, and with large doses in four hours. 6. The bicarbonate should always be given an hour before eating. 7. At the beginning of a meal the administration of the bicarbonate appears to suspend the secretion of pepsin. After the meal the exciting action becomes attenuated. 8. Sodium carbonate also gives results somewhat analogous to those of sodium bicarbonate. These results, says the author, are of much importance, although they have not been entirely admitted by all experimenters.

According to Hayem, sodium bicarbonate stimulates the digestion, and the so-called excitation in the secretion of the gastric juice results from this fact, "that the processes of the stomach having progressed more rapidly, the maximum of the chemical acts is attained sooner. In reality, the employment of sodium bicarbonate always diminishes the amount of chlorides in the urine and tends to produce a depression of the processes of the stomach, not always at the moment of recovery, but subsequently."

With regard to clinical results, when three ounces of Vichy water are taken in two doses at an interval of half an hour, also when the dose is doubled, the acidity of the gastric juice is increased. Here the dose of sodium bicarbonate does not exceed eight grains, for Vichy water contains on an average sixty grains of the bicarbonate in a pint. The author thinks that the remarkable action of Vichy water in intestinal putridity and the secondary infections which result from it, particularly infectious icterus, results from the same fact, that is, from the increased acidity of the gastric contents. One of the most powerful antiseptics is hydrochloric acid, and one can understand that the increase of this acid constitutes an essential element of intestinal antiseptics.

There is another factor, the catarrhal element, which may be mentioned. It is well known that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal. It is a well-known fact that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal.

The employment of sodium bicarbonate in the treatment of diseases of the stomach is one of the most important and successful methods at our disposal. It is a well-known fact that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal. It is a well-known fact that the stomach is the seat of many diseases, and that the treatment of these diseases is often very difficult. The employment of sodium bicarbonate is a simple and effective method of treating these diseases, and it is one of the most important and successful methods at our disposal.

and in this case Vals water must be employed, as it contains a hundred and thirty-five grains of sodium bicarbonate to the pint, or the bicarbonate itself may be given in doses of from fifteen to sixty grains.

The author often associates the bicarbonate with intestinal antiseptics as follows: Salol, benzonaphthol, and sodium, each, a hundred and fifty grains. This is to be made up into thirty capsules. In cases of hyperchlorhydria he increases the sodium bicarbonate to three hundred grains, and decreases the salol and benzonaphthol, each, to seventy-five grains. One capsule is to be taken during the meal, and another four hours after.

M. Du Jardin-Beaumez concludes that: 1. In chemical dyspepsia, in cases of hypochlorhydria, the dose must be given an hour, or half an hour before eating, and in hyperchlorhydria during the meal, or from three to four hours afterward. 2. In muscular dyspepsia, when there is a tendency to stasis or to dilatation of the stomach, the dose should be given during the meal or an hour afterward. 3. That the best alkaline waters to be employed in the treatment of diseases of the stomach are those containing sodium bicarbonate.

Confidential Communications and Suits for Malpractice.

The *Cincinnati Lancet Clinic* for October 13th contains an article commenting on a case in which a physician charged with malpractice in failing to treat a dislocated hip properly lost his case before a trial court in Indiana, and afterward carried it to an appellate court. It appears that he had treated the patient for about two months, when it became apparent that his treatment was not proving successful, and he recommended the patient to go to Indianapolis, where there were surgeons better prepared to treat such cases. The physician went to that city with his patient, and several physicians saw the patient in consultation with him. On the trial the physician attempted to prove, by his own testimony and that of one of the consulting surgeons, what had occurred at this examination and to show the condition of the patient's injury at that time. This was objected to on the ground that such testimony would disclose confidential communications, which in the case of such communications made by a patient to his physician is strictly forbidden in Indiana by both statute and precedent.

The objection was sustained and a verdict of \$1,500 was found against the physician. On the appeal, the court reversed this judgment and ordered a new trial. While it was held that, as a rule, communications made by a patient to his physician were required by law to be treated as confidential, and while physicians were equally forbidden to make known the results of their observations and examinations of a patient's person, unless with the patient's consent or unless he waived the privilege, it was added that, when the patient sued the physician for alleged malpractice, the privilege was waived as to all matters connected with the physician's participation in the treatment of the case. It would be most manifestly unfair, said the Court, to establish any other rule. Furthermore, it could not be successfully asserted that the physician should not go into the details of the treatment of the patient, because it is connected with the remainder of his treatment and because the patient had not gone into it himself. According to the physician's testimony, the patient had not gone into it himself, but the court held that the physician was not bound to go into it himself, but that he was bound to go into it for the patient's benefit. It was not possible for the patient to go into it himself, because he was not a physician, and he was not a patient, and he was not a person who was bound to go into it himself, but that he was bound to go into it for the patient's benefit.

The court held that the physician was not bound to go into it himself, but that he was bound to go into it for the patient's benefit. It was not possible for the patient to go into it himself, because he was not a physician, and he was not a patient, and he was not a person who was bound to go into it himself, but that he was bound to go into it for the patient's benefit. The court held that the physician was not bound to go into it himself, but that he was bound to go into it for the patient's benefit. It was not possible for the patient to go into it himself, because he was not a physician, and he was not a patient, and he was not a person who was bound to go into it himself, but that he was bound to go into it for the patient's benefit.

his own testimony and by that of the consulting surgeon, anything that had occurred at the examination in Indianapolis, so far as it was pertinent to the issues involved in the cause.

Mental Disturbance as a Cause of Zoster.—In the *Lancet* for October 13th Mr. Antony Roche remarks that there are few diseases more interesting than zoster from a physiological point of view, and states that he has been struck with the frequency of its occurrence after some cause that produces mental depression or anger. This, he says, has been noticed by others, and he cites Bateman and Schwartz as having recorded such instances. He himself has noted the following cases: 1. A woman suddenly received the news that her husband had been ordered to India, and the next morning the eruption appeared on her left side. 2. An old man learned that a firm in which he was interested had failed, and that evening he noticed the spots on his left side. 3. A woman was much distressed at the sudden illness of her son, and on the following morning the eruption was found to have appeared. 4. A child, six years old, of remarkably equable temperament, was sent to bed for disobedience. She cried very much, and the next morning the eruption was noticed on her left side. 5. The author was recently consulted by a woman whose only son was shortly to be married. She complained of pains in her left side and of an eruption, which turned out to be that of zoster. She herself ascribed the rash to grief at the idea of parting with her son.

A Post-graduate Course for Montreal.—The *Montreal Medical Journal* urges the need of post-graduate instruction in Montreal. When, says our contemporary, a physician visits that city during the college session he finds that he is a supernumerary, for everything in the way of teaching is for the benefit of the students. He is shown the interesting cases, but has no opportunities for study unless he enters on the same footing as an undergraduate, and that, in the great majority of cases, he is unwilling to do, as he wishes to take up only certain branches in which he feels that he needs some knowledge. The *Journal* recognizes that there are difficulties in the way of arranging such a course, but feels that it must come before long. It suggests a course lasting for four weeks, arranged on a plan similar to that of the summer session. This, it thinks, would do for a beginning, to be improved upon in the course of time. It is acknowledged that this would involve more work for the teachers, who already are heavily burdened, but in view of the great gain that would accrue to Montreal and her universities from such a course, when found practicable, our contemporary feels sure that the additional labor would not be begrudged, and that, being given cheerfully and in concert, it would result in success.

A Question of Ownership.—The *Province médicale* for October 13th, says: "Has a tooth that has just been extracted an owner, and, if it has, to whom does it belong? This singular question has been actually submitted to a court at Gera. A person who had suffered for a long time with violent toothache consulted a dentist who extracted the tooth. As it appeared to him to be an interesting specimen, he wished to preserve it and put it into his collection of curious things. The patient, however, claimed the tooth as his property, and, as an amicable settlement could not be established between them, the patient lodged a complaint of fraudulent appropriation against the dentist. The accused demanded the tooth and supported his claim by quoting several decisions in similar cases. He maintained that when a tooth was extracted it became an object without an owner and that thus it fell into the possession of the dentist. He argued that there could be no fraudulent appropriation of an object which had no owner." The court decided in favor of the dentist.

Original Communications.

THE DIFFERENTIAL DIAGNOSIS OF
TRAUMATIC INTRACRANIAL LESIONS.*

BY CHARLES PHELPS, M. D.

STUDIES ON BELLERIE AND SURVIVANT'S HOSPITALS
CONSIDERING SURVIVANT'S HOSPITALS

In a paper read before this association two years ago, I indicated the comparative facility with which it is possible to diagnose cerebral traumatism from morbid conditions of internal origin, and also recognized the difficulty of discriminating various encephalic injuries from each other.[†] Since that time additional observations and analyses of their results have served to broaden the diagnostic horizon. I submitted then an abstract of one hundred and twenty-four cases. I can now add to these one hundred and seventy-six others which I have since noted, a total of three hundred, of which one hundred and thirty terminated in death and were made the subject of necropsy.

These additional cases may be summarized as were those previously recorded:

I. *Fractures involving the base:*

Recovered.....	36
Died.....	59
Number of necropsies.....	52

II. *Fractures confined to the vertex:*

Recovered.....	31
Died.....	12
Number of necropsies.....	7

III. Intracranial injuries without fracture:

Recovered.....	21
Died	17
Number of treated pigs	4

The concentration of the two series drops in aggregate of

1. *Fractures involving the base:*II. *Fractures confined to the vertex:*

Recovery time	10
Down	200
Number of test transactions	1000

III *Indonematalypus* subgenus *Indonemata*

Responsible	20
Trust	30
Number of respondents	50

Total number of respondents	177
Male	100
Female	77

In accordance with a well-known purpose, I will continue my study on the education of women.

symptoms in the fatal cases, and to their attendant lesions as verified by necropsic inspection. In order to make this synopsis complete in itself, I shall reproduce in connection with these recent histories an epitome of the analogous cases included in the former series.

The temperatures quoted are rectal: and hæmorrhage is denominated cortical when derived from laceration of the surface of the brain, pial when occasioned by rupture of the pial vessels in meningeal contusion, and epidural when situated between the dura and the skull.

DEPARTMENT OF THE ARMY: NAVY: AIR FORCE: 1004-501-8-0

Case 1. *Symptoms*.—With delirium, high temperature; coma; hæmorrhage from left ear; death in forty-eight hours.

Lesions.—Laceration of both parietal lobes upon their lateral and inferior surfaces, continued beneath the

CASE II. *Syncope*. Afflicted person still intact, without case. Suicide by drowning after twenty-four hours.

CASE III. Symptoms: Coma, starting a few days after rigidity, and dilatation of left pupil; hemorrhage from right ear, and later from right nostril; left hemiplegia after twelve hours, with disappearance of earlier symptoms; urine not controlled; consciousness not restored. Death in six days.

Lesions..—Laceration of inferior and external surfaces of left frontal and of right temporo-sphenoidal lobes; corresponding cortical hæmorrhages thinning toward base and vertex; general hyperæmia.

CASE IV. *Symptoms*.—Semicoma, mild delirium, imperfect articulation, with slow and irregular respiration, which continued for three days; paralysis of right upper extremity and of right upper and lower legs, occurring in regions at different times; mental condition varying from normal to one of noisy delirium; patient usually restless and during last two days unconscious. Temperature on admission, 101°; during first week, 100°; in second week, 99°; and rose steadily from 103° to 109° through last two days. Death in forty-five days.

Lesions.—Subcortical laceration beneath the site of depressed fracture, external to right parietal eminence; subarachnoid

delirium requiring mechanical restraint. Temperature on admission, 102° ; ten hours later, 105° ; declined to 101.8° , and then rose steadily to 106.6° . Death in twenty-nine hours.

of both temporo-sphenoidal lobes, and of inner border of right frontal lobe, and hippocampus, the lower surface of both hemispheres, convexity of cerebellum.

delirium, muscular tremor, irregular pupils, frequent and inter-

Lesions.—Contusion of surface of right occipital lobe posteriorly, with minute hemorrhages and softening; laceration of inferior surface of both frontal lobes, and of right cerebellum; epidural hemorrhage over both occipital lobes beneath the site of an extensive depressed fracture; cortical hemorrhage over inferior surface of cerebellum and beneath the situation of the epidural hemorrhage, where it was firmly coagulated and surrounded by plastic inflammatory exudation; thrombi in superior longitudinal sinus and torcular Herophili, and in right lateral and inferior petrosal sinuses and jugular vein; subarachnoid serous effusion over parietal and occipital lobes.

CASE VIII. Symptoms.—Coma; stertor; muscular rigidity of both sides, most marked on the right; strong contraction of both pupils, but more marked in the left; no change in general condition till death, fifty-four hours later. Temperature on admission, 100.4° , rising progressively to 103.8° ; declined post mortem.

Lesions.—Laceration of anterior border of left temporo-sphenoidal lobe and of the anterior and internal borders of both frontal lobes; cortical hemorrhage covering the whole base of the brain; subcortical laceration with clot occupying the whole interior of the left frontal and temporo-sphenoidal lobes, and filling with blood both lateral ventricles and both occipital lobes; slight epidural hemorrhage at point where fracture began in right inferior and posterior parietal region; slight subarachnoid serous effusion; thrombus extending from torcular Herophili through right occipital and inferior petrosal sinuses into the jugular vein.

CASE IX. Symptoms.—Partial consciousness for twenty-four hours; became complete; hemorrhage from both nostrils and from right ear; delirium on the fifth day with post-cervical muscular rigidity, restlessness, and retraction of the abdomen; Cheyne-Stokes respiration and death. Temperature for three days, 99.2° ; on the fourth day, 103.2° ; on the fifth day, 104.8° .

Lesions.—Laceration of antero-inferior border of left frontal lobe and of inferior surface of right cerebellum; cortical hemorrhage covering superior and external surface of left cerebrum; general hyperæmia of the left hemisphere with punctate extravasations.

CASE X. Symptoms.—Partial unconsciousness and left hemiplegia, followed by irritability; hemorrhage from left nostril. Death in twenty-four hours.

Lesions.—Epidural hemorrhage over left temporal region beneath a separation of the coronal suture; laceration of the right frontal, right parietal about the fissure of Rolando, and of left temporo-sphenoidal lobe.

CASE XI. Symptoms.—Coma; stertor; pulse 70; respiration 7; dilatation of left pupil and contraction of right; paraplegia; rigidity of trunk and limbs; and under softening of trunk, death in five hours after admission.

Lesions.—Large pial hemorrhage, mainly at the base, blood still fluid; slight lacerations of inferior surface of left frontal and temporo-sphenoidal lobes; slight cortical hemorrhage from frontal laceration.

CASE XII. Symptoms.—Partial unconsciousness; loss of control of voluntary movements; hemorrhage from nose and left ear; respiration unconsciousness; death in six days.

Lesions.—Laceration of left parietal lobe beneath parietal eminence.

CASE XIII. Symptoms.—Coma; stertor; pulse 60; and respiration 10; rigidity of trunk and limbs; death in six days.

Lesions.—Small lacerations over inferior surface of left frontal and temporo-sphenoidal lobes; slight cortical hemorrhage from frontal laceration.

CASE XIV. Symptoms.—Partial unconsciousness; rigidity of trunk and limbs; hemorrhage from left ear; death in seven days.

walked home. Severe cephalalgia for three hours, followed by gradual supervention of coma, which became complete in four hours. Death in eight hours.

Lesions.—Large pial hemorrhage over external aspect of left frontal and parietal lobes; slight epidural hemorrhage beneath fine linear fracture upon right side; slight contusions of brain substance.

CASE XV. Symptoms.—Coma; dilatation of right and contraction of left pupil; right hemiplegia; pulse became slower and respiration more labored. Death in nine hours and a half.

Lesions.—Large epidural hemorrhage from rupture of left middle meningeal artery; slight laceration of left parietal, and of lateral border of right temporo-sphenoidal lobe.

CASE XVI. Symptoms.—Unconsciousness followed by stupor; slight but increasing dilatation of left pupil; slight hemorrhage from left ear; rigidity of left side; labored respiration; later, complete left hemiplegia; temperature, 101.2° . Death in twenty-one hours.

Lesions.—Laceration of inferior and lateral surfaces of right temporo-sphenoidal lobe and slight lacerations of inferior surface of frontal lobes along the median fissure; extensive cortical hemorrhage over right cerebrum; general hyperæmia.

CASE XVII. Symptoms.—Unconsciousness; right hemiplegia; dilatation of right and contraction of left pupil; full and slow respiration; normal pulse; supervention of stertor; death in eleven hours.

Lesions.—Extensive epidural hemorrhage from rupture of left middle meningeal artery; general hyperæmia, with minute concula and punctate extravasations.

CASE XVIII. Symptoms.—Unconsciousness for thirty minutes and subsequent irritability; hemorrhage from right ear; second day, somnolence, continued irritability, and lack of urinary control, and temperature 102° ; third day, delirium, temperature rising to 105.4° ; fourth day, moderate dilatation of the pupils, restlessness, hyperæsthesia, increase of surface temperature, followed by deep coma; temperature, $104^{\circ}+$ in the morning and $105^{\circ}+$ in the evening till death, at the end of the seventh day, when it rose to 106.5° .

Lesions.—Deep laceration of lateral border of left temporo-sphenoidal lobe; cortical hemorrhage over left occipito parietal region; cavity in right parietal lobe beneath point of fracture and opening upon the surface; subarachnoid exudation of thick pus over right posterior parietal and occipital lobes and in right inferior occipital fossa; general hyperæmia and punctate extravasations.

CASE XIX. Symptoms.—Permanent unconsciousness; irritability when disturbed; dilatation of both pupils, especially marked in the right; profuse hemorrhage from left ear, which continued for twenty-four hours, and was then followed by serous discharge; general convulsive movements, most pronounced in the right leg; temperature, 100° ; pulse, 80; single general convulsion, most violent on the left side, on the second day, and repeated on the third day; temperature rose steadily to 107.2° . Death in three days six hours.

Lesions.—Large epidural clot in left middle fossa; large and deep laceration of the lateral surface of left temporo-sphenoidal and of lateral and inferior surfaces of right temporo-sphenoidal lobes; small and deep laceration at right parieto-occipital junction; large cortical clot in left middle fossa; thin cortical coagulum over right cerebrum.

CASE XX. Symptoms.—Unconsciousness and muttering incoherence when disturbed; subconjunctival hemorrhage at outer part of left eye; slight temporary rigidity of right arm; restlessness and irritability; little change till death in seven days ten hours. Temperature on admission, 101° ; in two days

rose to 104.8° , declined from fourth to sixth days to 101° + to 102° +, and then rose progressively to 107° +.

Lesions.—Subcortical laceration of left frontal lobe, completely excavating and filling its interior with clot and disintegrated brain tissue and inclosed by a thin layer of cortex, except at the base, where it was covered only by the meninges; laceration of anterior two thirds of external border of right cerebellum; extravasation of blood of the size of a robin shot in the center of the right corpus striatum; slight cortical hemorrhage over posterior part of the right cerebrum.

CASE XXI. Symptoms.—Unconsciousness and delirium; hemorrhage from mouth and nose; mental condition in twelve hours became normal; slow pulse; labored respiration; rigidity of arms, especially of the right; normal pupils, followed by restlessness, muttering delirium, lack of urinary control, and unconsciousness; temperature, 104.8° to 106° . Death in twenty-four hours.

Lesions.—Laceration of superior surface of both frontal and both parietal lobes.

CASE XXII. Symptoms.—Coma; stertor; full pulse; pulmonary oedema beginning before admission; hemorrhage from right ear; death in two hours.

Lesions.—Epidural hemorrhage over both hemispheres and another of larger amount in the inferior occipital fossae compressing the pons and medulla; slight lacerations of inferior surface of both frontal and right temporo-sphenoidal lobes with some cortical hemorrhage.

CASE XXIII. Symptoms.—Unconsciousness; restlessness; coma nearly complete on fourth day; pupils, pulse, and respiration normal; temperature on fourth day, 102.2° ; on fifth day, 103° to 106° ; on sixth day, 107° . Death in five days and a half.

Lesions.—Laceration of external surface of left frontal and left temporo-sphenoidal lobes, with consequent cortical hemorrhage.

CASE XXIV. Symptoms.—Unconsciousness; persistent vomiting; hemorrhage from left ear; moderate dilatation of pupils, especially of the left; temperature, 98° ; second day, restoration of consciousness, delirium; third day, wide dilatation of both pupils, which were only slightly responsive to light, the left continuing to be more markedly affected than the right, and this condition permanent; sixth day, mind clear but apathetic, followed by stupor, with paresis and anesthesia of all the extremities, more marked on the right side; later, left foot and right hand less paretic, mind clear, but senses blunted, some right facial paralysis, cephalalgia, rapid and feeble pulse; ninth day, delirium and recurring unconsciousness; eleventh day, patient neither speaks nor moves and was unresponsive to pain or external irritation; on the fifteenth day, death. Temperature below 100° till fourth day, when it rose to 103° , and then varied from 100° to 102° till the twelfth day, when it rose to 104° , and was afterwards from 103° to 104° .

Lesions.—General hyperemia with minute cerebral and excessive oedema; slight lacerations of inferior surface of right temporo-sphenoidal lobe and one on each of the superior and external surface; very moderate cortical hemorrhage extending over right occipital lobe.

CASE XXV. Symptoms.—Stupor; hemorrhage from right ear; loss of control of urine and feces; on the fifth day, second day, active delirium, muscular tremor, delusions, and intrusions of unconsciousness; sixth day, some stertor, recurring delirium, normal size of the pupils, slight contraction of left pupil, and slight right facial paralysis; seventh day, the right consciousness returning some, and some eyes followed by passage of right urine and feces, and expression of some freedom of voluntary right side movements, soft neck flex. Death on the

eighth day. Temperature till fourth day, 100° to 102° ; afterward 103° to 104° till eighth day, when it rose to 105.6° and declined to 104.8° .

Lesions.—Thin layer of pial hemorrhage, covering both parietal and both occipital lobes, and meningeal hyperemia; large subarachnoid serous effusion; general oedema of brain substance and minute vessels filled with coagula; fluid blood in anterior cornu of left lateral ventricle; small lacerations of superior and external surface of right frontal and of left occipital lobes and on either side of median fissure of cerebellum.

CASE XXVI. Symptoms.—Vertigo and feeling of illness; hemorrhage from right ear and nostril; temperature, 100° ; soon followed by hæmatemesis, coma, and stertor. Death in four hours.

Lesions.—Epidural hemorrhage, compressing right frontal lobe laterally; slight pial hemorrhage on either side of the anterior columns of the medulla; extravasations into the pons in both transverse and longitudinal fibers, the largest a half by a quarter inch in diameter; general hyperemia with punctate extravasations and coagula in the minute vessels.

CASE XXVII. Symptoms.—Coma; stertor; frequent weak and irregular pulse; slight hemorrhage from right nostril; protrusion of both eyes and dilatation of both pupils, especially of the left; rigidity of right side. Death in eight to ten hours.

Lesions.—Epidural hemorrhage in right occipital fossa; small laceration of inferior surface of left frontal lobe anteriorly; cortical hemorrhage over both frontal lobes.

CASE XXVIII. Symptoms.—Paresis of left lower extremity; temperature, 98.8° ; fourth day, temperature suddenly rose to 99° + to 102° ; fifth day, delirium, temperature 105.2° to 106° ; death.

Lesions.—Laceration of inferior surface of left temporo-sphenoidal lobe; cortical hemorrhage, filling left middle fossa.

CASE XXIX. Symptoms.—Coma; stertor; dilatation of right pupil, left invisible from ecchymosis; anesthesia followed by paralysis of right upper extremity; pulmonary oedema; second day, urinary control lost, mind clear, pupils normal, motor and sensory function restored; fifth day, gradual increase of temperature, subconjunctival hemorrhage noted; sixth and seventh days, mental condition apathetic, subconjunctival hemorrhage increased; eighth day, sudden unconsciousness, and on the ninth day, death. Temperature on admission, 101.6° ; fifth day, 103° ; sixth day gradually declined to 100° ; eighth day, 104.8° , and rapid decline to 102.8° ; ninth day, 106° .

Lesions.—Subcortical laceration, disintegrating and filling with clot the interior of both frontal lobes; on left side the median surface ruptured through the arm center and gyrus fornicatus, and the lateral ventricle invaded; deep laceration of external border of left cerebellum; internal brain structure softened and reddened in patches of limited contusion.

CASE XXX. Symptoms.—Delirium; general hyperemia; till death; slight hemorrhage from both nostrils; left pupil dilated; right contracted; loss of control of urine and feces; temperature on admission, 101° ; till next day, 111° ; then rose progressively to 108° . Death in three days and a half.

Lesions.—Deep and wide excavating mass in the center of left cerebellum; laceration excavating inferior surface of right frontal, extending to the base of the brain; laceration of middle portion of gray substance, half an inch in length, extending from third with three or four inches from base of brain, extending to the base of the brain; laceration of right frontal lobe, extending to the base of the brain; laceration of left frontal lobe, extending to the base of the brain.

CASE XXXI. Symptoms.—Delirium; general hyperemia; till death; slight hemorrhage from both nostrils; left pupil dilated; right contracted; loss of control of urine and feces; temperature on admission, 101° ; till next day, 111° ; then rose progressively to 108° . Death in three days and a half.

carried in the ambulance; in the interval no evidence of serious injury; on admission, pupils contracted, sudden cyanosis, and death in twenty-five minutes.

Lesions.—Epidual hæmorrhage over left occipital lobe; pial hæmorrhage in inferior occipital fosse, compressing the medulla; cortical hæmorrhage over both frontal and both temporo-sphenoidal lobes from laceration of their inferior surfaces.

CASE XXXII. Symptoms.—*Primary:* Consciousness retained; hæmorrhage from right ear; no general symptoms; temperature, 100.4° , and afterward normal. *Secondary:* On the twentieth day, some lethargy and frontal headache; twenty-third day, severe frontal headache, delirium, somnolence, and left hemiplegia; twenty-fourth day, complete left hemiplegia and hæmiæsthesia, insensibility of both pupils, continued somnolence, normal mental condition when roused, temperature 98.5° , pulse 56, cicatrix of wound firm and uninfamed; twenty-fifth day, patient roused with difficulty, action of bladder and rectum unconscious and involuntary, temperature 100.2° ; operation and evacuation of pus, one to two drachms, from subcortical abscess, beneath the angular gyrus. Temperature rose to 108° , and death occurred sixteen hours later.

In the interval between the primary and secondary symptoms there was posterior cervical glandular enlargement, with some constitutional reaction.

Lesions.—Subcortical abscess cavity, which had been evacuated during life. No superficial laceration or hæmorrhage.

CASE XXXIII. Symptoms.—Unconsciousness, which continued till death; hæmorrhage from left ear; dilatation of both pupils, and subsequent contraction of the right; muscular relaxation, followed by later rigidity; temperature on admission, 99.6° ; afterward 99.6° to 100.4° ; an hour post mortem, 101.2° . Death in twelve hours.

Lesions.—Deep laceration of posterior portion and inferior surface of left temporo-sphenoidal lobe, with consequent cortical hæmorrhage over occipital lobe; excessive cerebral hyperæmia.

CASE XXXIV. Symptoms.—Coma; stertor; loss of urinary control; hæmorrhage from nose and later hæmatemesis; pulse, 96 and full; respiration, 18; temperature, 100° , rising gradually to 102.6° some time before death, in fourteen hours after admission.

Lesions.—Small epidural hæmorrhage at site of fracture; rupture of dura; corresponding laceration in anterior inferior parietal region; laceration of anterior half of right middle temporal convolution; small laceration in center of left cerebellum.

CASE XXXV. Symptoms.—Unconsciousness, which continued till death; hæmorrhage from right ear; temperature, 100.4° ; pulse, 60; respiration, 20. Death in seven hours.

Lesions.—Linear fracture through right side of the occipital bone to jugular foramen; pial hæmorrhage over both occipital and posterior portion of left parietal lobes; excessive general hyperæmia.

CASE XXXVI. Symptoms.—Unconsciousness, which continued till death; hæmorrhage from right ear; temperature, 100.4° ; pulse, 60; respiration, 20. Death in seven hours.

Lesions.—Linear fracture through right side of the occipital bone to jugular foramen; pial hæmorrhage over both occipital and posterior portion of left parietal lobes; excessive general hyperæmia.

temporo-sphenoidal lobes; pial hæmorrhage over whole right parietal region.

CASE XXXVII. Symptoms.—Consciousness lost but regained before admission after suicidal pistol-shot wound of the head; total loss of vision; exophthalmia of both eyes; dilatation of both pupils, which were irresponsive to light; temperature, 100.2° ; pulse, 60; respiration, 20. Ophthalmic examination by Dr. P. A. Callan on the second day disclosed only patches of retinal hæmorrhage; mental condition unimpaired; sense of smell entirely lost. On the fourth day an unsuccessful attempt was made to extract the ball, and a drainage-tube was afterward carried from the foyer of entrance through both frontal lobes to a cranial opening made upon the opposite side; followed for five days by discharge of brain tissue, and then till death by pus in increasing quantity. Mental condition normal till the fifth day, sluggish till ninth day, and afterward marked by increasing delirium, which lapsed into a muttering stupor at the end of life on the thirteenth day. Temperature at time of operation, 99° ; rose to 103.6° in ensuing twenty-four hours, and then varied from 102.4° to 104.5° on the last day; pulse and respiration nearly normal till just before death.

Lesions.—Ball penetrated external wall of the right orbit, just behind the external angular process; passed beneath optic nerve, comminuted inner wall of the orbit, crista galli, cribiform plate, and lesser wing of the sphenoid; entered left orbit through inner wall, and was found beneath left optic nerve. In the cranial cavity its course was beneath both optic nerves. Sub-arachnoid purulent effusion covered both frontal lobes, more copious on the left side and at the base; left frontal lobe was excavated and filled with pus and brain detritus; pus also existed in the tract of the drainage-tube through the right frontal lobe.

I am indebted to a colleague for the opportunity of observing this case.

CASE XXXVIII. Symptoms.—The patient, after having passed through three hospitals, with three discharges and two transfers, and after having wandered about the streets and suffered much exposure, was finally received and allowed to remain in an asylum for the insane on the eighth day after a fall from the stoop of her house. She had then delusions and other symptoms of mental derangement, left facial paralysis, left sub-conjunctival hæmorrhage, and hæmorrhage from both ears. She died on the twenty-fourth day from the reception of the injury.

Lesions.—Transverse fracture of the base, extending through both petrous portions and left orbital plate; laceration of inferior surface of left frontal lobe; small subcortical laceration of left parietal lobe; cortical hæmorrhage at base and over the external surface of both hemispheres; general contusion.

CASE XXXIX. Symptoms.—Profound coma, which continued till death; stertor; pulse, 70, full and strong; temperature, 99.4° . Death in seven hours.

Lesions.—Linear fracture through right side of the occipital bone to jugular foramen; pial hæmorrhage over both occipital and posterior portion of left parietal lobes; excessive general hyperæmia.

CASE XL. Symptoms.—Contusion of left parietal region; primary unconsciousness; epistaxis; delirium, which continued till admission; no record two days later, unconsciousness at that time; pupils normal; pulse rapid and weak; respiration, 20; temperature, 101.4° ; coma till death. Death in seven hours.

Lesions.—Linear fracture of superior table of frontal bone from tuber to right jugular foramen; also fissure of left orbital plate; thrombosis of superior sagittal sinus; left sinus but not disconnected; general hyperæmia, with some meningeal hæmorrhage.

CASE XLII. Symptoms.—Unconsciousness resulting from injury received on the preceding day; admission to hospital after twenty-four hours; right pupil slightly dilated; temperature, 98.8°; pulse, 96; respiration, 24; temperature rose in the 24 hours. Death in about thirty hours from time of injury.

Lesions.—Linear fracture running nearly transversely through left parietal bone into right coronal suture; also V-shaped fracture from *contre-coup* in right middle fossa; epidural hemorrhage over right frontal lobe from vertex to base; laceration of middle two fourths of second right temporal convolution, with cortical hemorrhage extending over parietal lobe; general hyperæmia with minute coagula in all parts of the brain.

CASE XLIII. Symptoms.—Shock; unconsciousness; temperature, 96°; pulse, 78; respiration, 21; sudden cyanosis, with extreme dyspnoea, and loss of consciousness which lasted for only three or four minutes, followed by numbness of both arms; no further dyspnoea; delirium fourteen hours later, and death four hours later still, preceded by a single convulsive movement and without respiratory disturbance.

Lesions.—Occipital contusion and wound behind right ear; bifurcated linear fracture in right inferior occipital fossa; pial hemorrhage beneath tentorium, extending around lateral borders of cerebellum and covering the pons. Moderate general hyperæmia.

CASE XLIV. Symptoms.—Scalp wounds in left parietal and large hematoma in right parietal region; compound linear left parietal fracture; no loss of consciousness; slight dilatation of both pupils; pulse feeble; respiration shallow; temperature after four hours, 96.1°. Death in nine hours and a half.

Lesions.—Parietal fissure extended nearly entire greater wing of sphenoid; considerable subarachnoid serous effusion; general hyperæmia and thrombosis of cerebral vessels; contusion posteriorly.

CASE XLV. Symptoms.—Unconsciousness 10 hours; pupils normal; considerable parietal area black; right side of the body; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

Lesions.—Left parietal skull fracture in the skin, at the vertex involving the median line, two by three inches in its diameter; on the left side the osseous fragments rested upon the dura mater and the dura mater presented the same fissure extended into the right orbital plate; epidural clot on the left side in which the parietal fracture lay; on the right side, a small amount of blood beneath the dura mater; the brain was commingled; anterior part of both lateral ventricles contained blood; cortical hemorrhages extended from the posterior parietal lobe to the frontal lobe, and in the frontal lobe with hæmorrhage.

CASE XLVI. Symptoms.—Unconsciousness 10 hours; pupils both pupil dilated; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

Lesions.—Right parietal skull fracture extending through both orbital plates and fissure of right middle fossa; large hematoma in right parietal region; considerable subarachnoid serous effusion; general hyperæmia and thrombosis of cerebral vessels; contusion posteriorly.

CASE XLVII. Symptoms.—Unconsciousness 10 hours; pupils both pupil dilated; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

Lesions.—Disjunction of coronal suture, multiple fissure of frontal bone, and fissure through right parietal and occipital bones, with branch into posterior fossa; laceration of right frontal, parietal, and occipital lobes, and wound of dura permitting escape of brain tissue through the osseous parietal opening.

CASE XLVIII. Symptoms.—Contusions of left side of head and face and tactile evidence of simple fractures; unconsciousness which continued till death; epistaxis and hæmatemesis; temperature on admission, 99°; pulse, 96; two hours later—temperature, 96.4°; pulse, 140; respiration, 53; five hours later—temperature, 95.6°; pulse and respiration as before; second day, deglutition became possible and sensitiveness to external impressions was regained; pupils slightly dilated; temperature, 103° to 103.6°; pulse, 168 to 196; respiration, 48 to 58. Death in thirty-four hours. (In this, the case of a child, four years and a half of age, the brain weighed forty-eight ounces, and was in all respects symmetrical; the skull was of normal thickness.)

Lesions.—Separation of the coronal and of the bifrontal suture to nasal bones, which were fractured; fracture continuous into ethmoid body, with complete detachment of the crista galli and cribriform plate; fissure of right parietal bone and depressed fracture of left frontal above orbital ridge; slight epidural hemorrhage over the vertex; laceration of frontal lobes in the space corresponding to the site of cribriform plate; general hyperæmia with minute coagula, most marked in cerebellum and occipital lobes.

CASE XLIX. Symptoms.—No loss of consciousness; admission to hospital refused two days after a fall in the street; found dead two hours later a block away; wound over left eye.

Lesions.—Pneumonia involving lower lobe of right lung, and large pulmonary fracture extending through the superior vena cava and united with the fracture of the orbital bone; general hyperæmia and thrombosis.

CASE XLX. Symptoms.—Unconsciousness 10 hours; pupils both pupil dilated; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

Lesions.—Parietal fissure extended nearly entire greater wing of sphenoid; considerable subarachnoid serous effusion; general hyperæmia and thrombosis of cerebral vessels; contusion posteriorly.

CASE L. Symptoms.—Unconsciousness 10 hours; pupils both pupil dilated; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

Lesions.—Parietal fissure extended nearly entire greater wing of sphenoid; considerable subarachnoid serous effusion; general hyperæmia and thrombosis of cerebral vessels; contusion posteriorly.

CASE LI. Symptoms.—Unconsciousness 10 hours; pupils both pupil dilated; temperature, 98.4°; pulse, 104; respiration, 18; in seven hours, 104.4°; in nine hours, 106.6°; pulse, 80 to 145; respiration, 18 to 24. Death in three hours and a half.

A CASE OF SARCOMA OF THE TONSIL.²

BY ARTHUR W. WATSON, M. D.

PHILADELPHIA.

THAT sarcoma of the tonsil, although a rare affection, is not so infrequent as was formerly taught would appear from the long list of cases now on record and the fact that the list is growing rapidly. In his article on Malignant Disease of the Tonsil (*Am. Journal of the Med. Sciences*, 1892) Newman mentions having collected fifty-two reported cases. Since that time I have found ten more reported, two of which were reported during the past winter.

Compared with carcinoma of the tonsil, sarcoma may be considered uncommon. The variety of sarcoma most frequently found in the tonsil is the round-celled; it is also the most malignant.

The following case is one of round-celled sarcoma:

Mrs. E., aged fifty-three years, a German, came to the throat clinic of the Philadelphia Polyclinic, January 15, 1894. She stated that she had been well, with the exception of an attack of influenza, up to Christmas day, when she was taken with a severe sore throat, which the physician who then attended her pronounced an abscess of the tonsil. She thought there had been a slight discharge of pus, but there had been no relief of the pain, which continued to increase. At the time of her first visit to the clinic she complained of continuous severe pain in the left side of the throat, aggravated by attempts at swallowing, especially solids. The pain extended to the ear, where it was very acute, effectually preventing sleep.

When the throat was examined there was found moderate swelling of the left tonsil, to which the anterior pillar of the fauces, thickened and spread out, was adherent. Both the tonsil and anterior pillar were greatly congested; a network of engorged capillary vessels could be seen covering the surface. There was general congestion of other parts of the fauces. One enlarged lymphatic gland, the size of a bean, could be felt beneath the angle of the jaw. There was no ulceration or infiltration of surrounding tissues, except the anterior pillar. The tonsil was removed, but the patient, although she was relieved of the pain, did not improve.

At first, as the diagnosis was uncertain, she was given general remedies and local applications. As there was, from the history of the attack, a possibility of retained pus, and as the tonsil had been pronounced inflamed, the first treatment was directed toward the removal of pus and the relief of inflammation. The patient was given a course of treatment, but the pain continued to increase, and the swelling of the tonsil and anterior pillar continued to increase.

At the patient's next visit, on January 22, 1894, the tonsil was found to be still enlarged, and the anterior pillar still adherent to it. The pain was still present, and the swelling of the tonsil and anterior pillar continued to increase. The patient was given a course of treatment, but the pain continued to increase, and the swelling of the tonsil and anterior pillar continued to increase.

pain until toward the last. For a few days after the removal of the tonsil there was considerable pain, but it was relieved by sedatives and gargles. After the operation the wound became covered with a thick, white slough, which in a week had cleared off, and a few days later the throat was entirely healed. Three weeks after the operation the following notes were taken: The patient can swallow without difficulty; the pain in the ear is almost gone; she sleeps well; the gland beneath the angle of the jaw has disappeared. The patient has been seen recently and is still doing well. It is now over three months since the tonsil was removed.

Some of the symptoms in this case are worthy of notice as being out of the common: The apparently sudden onset of the disease, simulating an acute amygdalitis; the marked pain and dysphagia, in the absence of ulceration or extensive infiltration. The first, I find, is noted in some of the reported cases. These symptoms certainly increased the difficulty of early diagnosis.

Removal of the tonsil by the cautery knife has been done in several of the reported cases. Thus, in the well-known case of Gorecki, in which no recurrence had taken place in two years, the thermo-cautery knife was used. In a case of epithelioma of the tonsil reported by Newman (*Am. Jour. of the Med. Sci.*), in which there was no recurrence, the galvano cautery knife was employed. Several operations are reported where the cautery loop was used; the results in some of them were very good; but I do not think the loop is as efficient as the knife, as it does not remove all of the gland, and can not be made to include other structures that may be involved. It seems to me that this method of cutting out the parts with the cautery is preferable to the use of the knife or curette, in that there is no hæmorrhage (an important point in operating in the mouth), the operation can be made thorough, and the wound is effectively cauterized—a precaution which is often taken after removal by the knife.

THE IMPORTANCE OF AN EARLY DIAGNOSIS OF MALIGNANT TUMORS OF THE THROAT.*

BY J. W. GLEESMANN, M. D.

ST. LOUIS.

ALTHOUGH I shall not be able to present any new facts in connection with this subject, I venture to make these remarks on account of recent observations which have left a lasting impression on my mind. It has fallen to my lot to see during the last few years an unusually large number of malignant tumors of the throat and its adjacent regions, and the unsatisfactory results obtained have very naturally created the desire to better, if possible, the chances of the patient.

When a patient calls on us in whom, after a careful examination and possibly prolonged observation, we have made the diagnosis of a malignant growth, there are, so far as the writer is possible goes, not many means open for us to deal with the affection. I shall not ventilate the

*Read before the American Laryngological Association at its sixteenth annual meeting.

question of the possibility of an operation in cases which are so far advanced that the decision has to be given to the patient, whether he will slowly die after the performance of tracheotomy to relieve stenosis, or take the risk of a probable death by an attempt at removal. I shall confine myself to speaking of those methods which are practiced at the present time, and which have been followed by cure in a certain number of cases.

The first method, which naturally has most interest for the laryngologist, is the endolaryngeal operation. It has been proved by a number of instances, to which I shall presently briefly refer, that not only temporary removal but also a lasting cure can be attained by this procedure. It is to be regretted that such opportunities are so rare, as in my opinion endolaryngeal treatment could be much more frequently resorted to if the patients came early enough for examination. The majority of those I have seen did not come directly to me on account of their throat trouble, but were sent by physicians, and in no case was endolaryngeal treatment feasible or rational.

The first endolaryngeal operation for epithelioma of the vocal cords was done by Schnitzler in the year 1867, with no recurrence twenty years later. He published a record of his operation as late as 1888, and was, therefore, antedated by B. Fraenkel, who demonstrated his well-known first case of a cure of laryngeal cancer *per vias naturales* before the congress of German surgeons, 1886. Fraenkel also relates in his treatise on cancer of the larynx five more cases operated upon in the same manner, the result of one of which is unknown; one patient was permanently cured, one had had no relapse in two years, another none in six months. In one patient the operation was a failure. Schnitzler also cites in his paper Türk, Mackenzie, Fauvel, Navratil, and Gottstein as endolaryngeal operators in this field. Finally, Schech removed a large laryngeal sarcoma with the galvanocautery snare. These few citations, which are by no means intended to be exhaustive, illustrate sufficiently that in isolated suitable cases the endolaryngeal method is justifiable and entitled to a trial.

As I said before, the laryngologist has only very seldom the opportunity of trying his skill in curing or even completely removing a malignant neoplasm by methods pertaining to his specialty. We, therefore, have to look for other means, if the disease has transgressed the domain of our working power, or when the lymph glands have already become affected.

Unfortunately, I have the regret to find that few methods which would be so efficient in the treatment of malignant tumors have been adopted. I will here call to mind the Dr. Coley of Brooklyn, of Brooklyn and New York, the toxic products, introduced by him into the system. As Dr. Coley will send a paper on this subject before the Surgical Association, I had somewhat hesitated to be introducing his treatment. But I am very ready, as a general surgeon, to submit to any good treatment to the cancerous. His publications on this subject can be found in the May number of the *Annals of the New York Academy of Medicine*, 1891, and in the *Proceedings of the American Association*

the Supplement of *Wood's Hospital*, 1890. As this method seems to me to be the most rational, I give it indulgence while I reiterate briefly what has already appeared in print and is well known to you. Dr. Coley states in the *First paper* that he has treated four patients with laryngeal malignant tumors with the toxic products of the streptococcus of erysipelas, in four of whom it succeeded in producing a true attack of erysipelas. All four patients had sarcoma, one of them of the tonsil, which diminished considerably in size, and had not increased after two years. In Case No. 1, related in the same paper, the patient had a sarcoma of the abdomen and pelvis measuring five inches by seven inches. After three months' treatment the tumor was reduced to two inches in diameter, and by verbal communication on April 18th it was learned that the boy was perfectly well, only a very small mass remaining in the inguinal region. This patient, as well as five others, were treated with the toxic products. Dr. Coley further permits me to state that in Case No. 3 in Wood's Supplement, with sarcoma of the soft parts of the back seven inches by five inches, and metastatic growths in the groin, the patient had recurrence after surgical operation. The first and second series of injections were made with erysipelas, the third with toxic products, and the patient remains cured now, over a year. The doctor's cases were all inoperable; he has also noticed improvement, but no cure yet, in cancer, and he finally obtains the best effect when the injections are made into the tumor itself. The zeal and devotion with which Dr. Coley develops his mode of treatment promised to inaugurate a new era for such poor sufferers, and I have no doubt will also yield encouraging results in our special departments.

In this connection must also be mentioned the application of methyl blue to cancerous tumors, with which our New York colleague, Dr. Willy Meyer, has made extensive experiments. He has informed me that his results from local applications have not been very satisfactory, but better from internal administration.

As it is evident from the foregoing that only a very limited number of cases can be satisfactorily treated by the above mentioned methods, we naturally look for surgery as the best means for relief.

As to the surgical aspects, the throat is not different from other parts of the body, and, if we choose two examples, the cancer of the throat and cancer of the breast and uterus. By referring to the development of surgery in these two diseases I would like to call attention to the fact that in the throat the cancerous growths are not so common as in the breast and uterus. By referring to the development of surgery in these two diseases I would like to call attention to the fact that in the throat the cancerous growths are not so common as in the breast and uterus. By referring to the development of surgery in these two diseases I would like to call attention to the fact that in the throat the cancerous growths are not so common as in the breast and uterus.

If this argument is correct as to the breast and uterus, it must also hold good for the pharynx, larynx, etc., and we can go a step further and say for all accessible parts of the human body.

But, with all the strides surgery has made in technique and antiseptic methods, there is also a line drawn for the surgeon which stays his hands and compels him to lay his instruments aside. I am convinced from my own observations and from conversation with some of our representative surgeons that by far too large a number of cases are seen by competent men only when the patient has reached a stage where an operation is either impossible or extremely hazardous. All the gentlemen spoken to commit themselves unqualifiedly by saying that the majority of cases come to the surgeon at too late a stage for favorable results. Excepting traumatism and sepsis, delay in operating is the most potent factor for bad results in surgery. I willingly concede the difficulty of a diagnosis, especially of an early one, in many such cases, and also fully appreciate the delicacy with which some of them have to be treated before the final overture. But the diagnosis once having been made by the practitioner or consultant, delay from any cause whatsoever is unjustifiable and unpardonable. If a patient is horrified at the idea of an operation, he can easily be induced to submit to it when told that he has a tumor in his throat which, if not removed, would grow and endanger his life. Many of my patients have been operated on without the word "cancer" ever having been mentioned to them either before or after the operation.

Although, in many instances, only a small part of the human body, the same considerations hold good in this region as in others, and the laryngologist can speak the more forcibly as to the necessity and the frequent neglect of an early diagnosis, as he can not be accused of any selfish motives, in view of the fact of his not being the operator in the majority of cases. It is not within the range of this paper to discuss the merits of the different operations, and it must be left to the surgeon in each individual case to decide if he will perform tracheotomy only, or extirpate the tumor in toto or in toto modified laryngectomy, as recommended by our esteemed member, Dr. J. Solis-Cohen, in suitable cases, or practice laryngofission. As to the latter, the record of the Russian surgeon, Pieniazek, deserves mention (*Zeitschrift für Chirurgie*, vol. xxxvi), he having published a series of thirty-seven cases of laryngectomies done with the throat hanging down, and followed by two deaths only, one from infection, the other from tubercle.

I shall not tax your time or patience with a history of my patients but give a short résumé. Of a total of thirty-seven, the pharynx was diseased in the larynx even to the entrance of the pharynx was reached thirteen, at the vocal cord, at the posterior wall, at the pyriform, and at the base of the tongue, implicating the epiglottis at the time of first examination. The patient with affection of the pyriform died after three months' treatment, and died well at present. The others lived. Of the cases of affection of the pharynx, at the posterior wall, at the pyriform, and at the base of the tongue, fifteen died, in the other the patient lived, and the pharynx was diseased in the larynx even to the entrance of the pharynx was reached thirteen, at the vocal cord, at the posterior wall, at the pyriform, and at the base of the tongue, implicating the epiglottis at the time of first examination.

suicide, being unable to earn a livelihood. As to the larynx, six patients had cancer, and all six are dead; one with alveolar sarcoma is living without recurrence, according to latest report obtainable. Laryngofission, with removal of diseased tissue, was performed twice; unilateral as well as total extirpation, twice each; tracheotomy alone, in a far advanced case, once. The growth had its origin, so far as could be ascertained, twice at the ventricular bands, with implication of Morgagni's ventricle; twice at the vocal cords; once at the glosso-epiglottic and aryteno-epiglottic folds; and twice its origin could not be determined, as the larger part of the larynx was filled with the neoplasm. Death ensued twice from shock soon after the operation, twice from pneumonia on the second and third day; one patient had a recurrence after six months, and died subsequently from exhaustion. The last one, with total extirpation of the larynx, did very well for several months, the wound had healed kindly, and the patient had regained his strength. He awaited with impatience the insertion of an artificial larynx, which had been imported from Europe, when he suddenly died from appendicitis.

It is, of course, impossible and fruitless at the present time to reason as to how many patients would have survived the operation and lived without recurrence of the growth if they had not died from shock or intercurrent affections. But it is clear, at least to my mind, that the number of survivors would be larger if they had come earlier to examination, and an operation involving less risk and less loss of tissue had been possible.

If I have in my remarks entered more fully into the treatment of the subject than the title of the paper indicated, it has been done for the purpose of showing the futility of our attempts at relief when the neoplasm has reached a certain dignity as to its extension, and to appeal earnestly to the profession at large to make an early diagnosis of malignant tumors of the throat.

A PLEA FOR EARLY OPERATION IN DISEASES OF THE ANTRUM OF HIGHMORE.*

By W. H. DALY, M.D.,
PITTSBURGH, PA.

SINCE the antrum is a closed cavity, excepting through a single opening by which it is closely related with the nasal, buccal, and other cavities, it of necessity follows that any disease of it may soon produce morbid conditions in one or more of the other accessory cavities.

This may follow the drainage of pus into the nasal cavity with subsequent inflammation of the mucous membrane. It may follow the obstruction of the separating bony wall by pressure, absorption, caries, or necrosis. There is also serious liability to damage to the eye, so that I make the plea that for all conditions in which severe inflammation, pus, tumors, or necrosis are present we should,

*Read before the American Laryngological Association at its sixteenth annual meeting.

as soon as the diagnosis is established, deal with the condition surgically, in order that the integrity, not only of the antrum itself, but the surrounding parts, is maintained to the greatest extent possible; and even if there is some doubt existing as to the disease of the antrum, or in cases that are otherwise somewhat masked, I would strongly advise an exploratory opening for diagnostic purposes, which may be made very small and yet efficient, and one which will close and heal up in a very short time if sufficient disease is not revealed to call for keeping it open.

I have had many cases of chronic as well as malignant disease of the antrum to deal with in the past twenty years, and the sum of my experience is, that for want of early diagnosis and operative treatment some of the patients have perished that with early operation could certainly have been permanently cured.

I am not quite sure that the specialist in rhinology is not sometimes to blame, as well as the general practitioner, for not taking early and active surgical measures in these cases instead of resorting to ordinary topical or medical treatment.

In August of 1888 I had a conversation with Mr. Lennox Browne, in London, on the subject of early operation on the antrum of Highmore.

He was then engaged in treating a number of cases, and making some observations upon their pathology and etiology.

Mr. Browne began by asking me the question, Do you see many cases of purulent catarrh of the antrum of Highmore in your practice? I told him I had seen a rather large number of them, and had reported two cases to the American Laryngological Association as early as 1882, six years before;* since that time some twenty-seven cases have fallen under my care, and I now have four cases under surgical treatment.

I was then, as I am now, in favor of early operation, whenever it is possible to see the cases early. In this view Mr. Browne agreed fully, and I see he has publicly verified his opinions by publishing in the March 31, 1894, number of the *British Medical Journal* a case, of which the following is a summary:

The patient, a young woman, aged twenty years, had been attacked with influenza about six weeks previously, the present one having occurred at the hospital. On the subsidence of the acute stage, she suffered severely from toothache, which involved the first and second bicuspid teeth on the right upper jaw. The pain was experienced seven or eight times a day, the right cheek being most affected on the occurrence of a chill, and rather thin discharge from the right nostril.

After removal of the first bicuspid, the antrum was opened through the socket; the cavity was washed and syringed out with a weak antiseptic solution, and the hole kept open by a loosely applied plug.

There was no complaint for a few days, the temperature fell, and the patient returned to the hospital, the character of which of their illness remained for treatment.

This was not the first example of acute inflammation of the antrum which Mr. Lennox Browne had had to deal with.

* See *Journal of the American Medical Association*, Vol. 1, No. 1, p. 10, 1888.

with, and now that attention had been drawn to the subject, the malady would in all probability be found to be less rare than had been hitherto considered.

Through the esteemed courtesy of Dr. G. Lenox Curtis, of New York, I was permitted a few weeks ago—in the early part of May, 1894—to examine a number of his cases of antral disease which he has operated upon at various recent periods.

Nearly all of the cases, excepting one or two, submitted to my examination by Dr. Curtis were of a non-specific type, and one of the exceptional cases was a most unusual one—viz., symmetrical in character, though not simultaneously so, the right side having been operated upon some months ago, and the left side was, at the time of examination, giving such evidence of disease as to call for operative interference. A curious phase of this case was the patient's ability to take a mouthful of cleansing or antiseptic fluid, and by a self trained voluntary, atmospheric and bucco lingual pressure cause the fluid to flow from the buccal cavity through the antrum and out of the nostril.

I am under the impression that with a little teaching other patients could learn as well to do this, as, for example, when traveling, it is not always possible for a patient to use a syringe, and cleanliness must be observed to get desired results.

I should qualify the remark about the above case of double antral disease by saying that while non-specific double cases are rare in my experience, we all know that a strong characteristic of syphilitic disease, even throat or palatal ulcerations or patches, is their usual symmetry. So this case of double antral disease, while it might be unusual as simple catarrhal disease, is another evidence of the symmetrical characteristic of specific disease.

As to the point of election for entering the antrum, I am of the opinion that the natural opening is not desirable, as it seems too much like tridling with treatment to endeavor to cleanse this cavity with a small syringe, with a curved point, entered at the natural antro-nasal opening; better far to make an opening either through the alveoli, the socket of a tooth, or through the bony wall of the antrum just below the malar bone, about the region just external to and above the second bicuspid tooth.

While I was formerly in favor of making a large opening, I find, after experience, that the opening should never be larger than a small goose quill, as a large one may cause whistling by air currents and permits the entrance of food.

In my opinion, the best means of cleansing the cavity is with the ordinary soft rubber compression-bulb syringe of the Davidson type, and a (greenish) tip. This affords nearly a continuous flow, with which a pint of antiseptic fluid can be poured through the cavity and allowed to flow out through the nose, carrying with it the diseased secretions.

One should be taken to drink some tea, lemonade, or some other nourishing liquid, after the operation, to keep the patient comfortable, and to keep the patient from getting too much excited, and to keep the patient from getting too much excited.

I have more than once trephined the antrum, and experienced a feeling of depression and collapse, and I

patient, who was a very intelligent woman, told me that during the stay of Dr. W. N. Bailey she had fairly good temperature following the operation; but on June 19th there were slight rigors followed by some elevation of temperature.

June 22d.—Paralysis of right side.

23d.—Clonic convulsions, which continued until death on January 25th.

I had in the meantime submitted a specimen of the tumor to Professor Matson, of Pittsburgh, an accomplished pathologist and microscopist, who pronounced it a giant-celled sarcoma.

CASE II.—J. H., male, aged forty-four years, married. Father died of pulmonary disease in May, 1892. Noticed pain over right eye most felt on the evening and at night eye broken.

August, 1892.—Dr. Treacy, the family physician, with Dr. McLaren operated upon the case by drilling into the antrum through the hard palate, and, following treatment of the cavity, there was relief.

In January, 1893, patient caught cold, and had intense pain again above the eye of the affected side, and he sought again his family physician, Dr. Treacy.

There was not much swelling or pain about the antrum, but a blister formed on the hard palate about the seat of the former trephining.

Some teeth were now removed by Dr. McLaren with relief of the pain.

November 2, 1893.—Dr. Treney sent the patient to me for treatment. His face was much distorted by swelling on the right side and the eye protruding. A large swelling in the submaxillary triangle of the same side of the size of a goose egg. Pain intense over right eye. General condition of the patient was very bad. The discharge from the naris on the affected side copious and foul to an extreme degree.

I trephined the antrum the following day and removed a quantity of brown, granular masses, equal to the normal capacity. These masses resembled old coffee grounds; they had a heavy, sickening, burned-chestnut odor.

After getting the patient cleaned up by antiseptic washes and free use of iodoform, I poulticed the swelling on the neck, and, with the exhibition of arsenic, cod-liver oil, and malt, in proper proportions, the tumor disappeared by absorption, and the patient was in a normal, promising condition. A confirmation of the success came on May 10, 1894, when I made an incision in the integument above, and I thought myself at a time that I was about to enter the second stage of the threatening disease, and to the benign; but untoward changes again occurred, largely from the erratic habits of the patient, and now at this writing, May 12, 1894, the case involves the eyeball, all of the malar bone and upper jaw of the affected side, the osseous nasi, and the

An assumption is being made, however, by the person (H. H. H.) who writes the concluding sentence. One might feel that one should not be too hasty and make a judgment to say that one has found a law.

[illegible]

Physarum polycephalum. Dried cultures of the genus *Physarum* have been shown to have an antioxidant effect upon the growth of cultured *Escherichia coli* bacteria.

ROSACEA: ITS CAUSE AND TREATMENT

By ELLICE M. ALGER, M. D.,

ROSACEA is one of the commonest of skin diseases, and occasions great annoyance to the average patient; partly by reason of its conspicuous blemish, and still more from the constant suspicion it entails as to its cause.

Like a good many other cutaneous troubles, it is either neglected entirely by the family physician or badly treated: whereas much can be done in all cases to lessen the patient's disfigurement, and in many a complete cure can be effected.

In its origin the disease is very insidious, beginning first as a mere temporary hyperæmia of the nose and cheeks, following some cause which generally can be very readily discovered. In process of time a stasis of blood occurring at frequent intervals results in a dilatation of the minute capillaries of the skin which is very noticeable.

This constitutes the first stage of the disease, and during its continuance the congested parts present an appearance of active inflammation, which is, however, entirely fictitious.

This stage is almost always associated with a certain amount of seborrhoeal supersecretion. At the same time there may develop a large number of superficial papules, pustules, or tubercles, which, however, when opened contain very little pus. In the majority of cases these pustules come only after the hyperæmia has lasted a long time, and constitute the second stage. In a very few cases, almost entirely in males, a third stage can be described, consisting of a general thickening of the skin and numerous comedones of the nose, which may be regarded as a further belief. As a rule the disease is easily recognized by the appearance of redness confined to the middle third of the face and caused by arterial tension. As the occurrence of superficial pustules, which often trace those of acne by their distribution, may be regarded as being secondary to the hyperæmia. It occurs more frequently in adults, especially in women, and is more or less symmetrical.

The cause of the trouble, we think, is a person with a cracked reason, a sliver usually caused by a fall, or being given a low temperature.

sult and partly by reason of the relaxing effects of the hot liquid on the blood-vessels.

Menstrual irregularities are also frequently associated with rosacea, but whether they act directly or only through the profound nervous and digestive disturbances that accompany them is as yet in doubt. In men, exposure to wind and weather is a frequent exciting cause, often complicated by intemperance or gastric derangement.

In both sexes constipation, anæmia, and chlorosis often seem to be the causes of rosacea, while one of the worst cases I ever saw was caused by the continuous application of hot poultices to the face for a period of two weeks.

The treatment is varied, and no one inflexible rule can be laid down. Each case must be treated by itself after a careful study of its cause.

We must first limit the patient's diet to food which contains a maximum of nourishment while entailing a minimum of digestive labor. Hot drinks and alcoholics should be entirely interdicted. Fats and sugars are usually badly borne, and excess of every kind should be carefully guarded against. At the same time digestion, if imperfect, should be assisted by bitter tonics or digestants of some kind. A very useful prescription is—

R Acid. hydrochlor. dil.,)
Tinct. nucis vom.,) ʒiij;
Tinct. gentian. ʒij;
Elix. cascar. ad ʒij.

M. Sig.: A drachm three times a day in water, before meals.

In certain other cases I have had excellent results from resorcin, five grains three times a day. Salol and ichthylol in about the same doses have also been highly praised.

Constipation and anæmia must, of course, be properly treated, and cases due to menstrual derangement will often respond remarkably to treatment in that direction.

Ergot is highly recommended by some authorities for its contractile action on the capillaries, but personally I can not claim much effect from it, and its abuse is only too common.

Local treatment is of great service, but often the temptation is to neglect for its sake the internal treatment which is really the more important. It does best in those cases caused by exposure to the elements.

Such patients should always keep the face protected against storms or changes of temperature by ointment or painting of some kind. Most of the prescriptions which have an astringent effect on the skin are valuable, like the well known "Feltz's tonic."

R Zinci sulph.)
Alum. sulphat.) ʒiij;
Aq. rose. ʒiij;
Oli. rosace. ʒss; (optional). ʒj; in ethylal. alcoholat.
sufficient for coll.

These applications have best be preceded by bathing the face in tepid water for a period of ten minutes two or three times daily. The treatment is especially to be resorted to in cases of exposure to the elements, or the temporary character of the disease, or in a severe permanent condition. In the second case, a solution of the first plan to scrape the

nose and cheeks with the dermal curette, removing the pustules and stimulating the skin very vigorously. If in spite of all these efforts the vessels still continue prominent, more vigorous treatment must be resorted to. An old method, not much used now, was to slit the vessel open with a knife, hoping that it might be replaced by a firm white scar not nearly as disfiguring as the red capillary. In some cases benefit arises from a process of scarification, covering the whole congested surface by a series of cross-cuts like those sometimes made in vaccinating little children. The cuts should just penetrate the skin, and bleeding should be encouraged. Afterward it can be stopped by applications of carbolic acid in glycerin (1 to 5).

This method is slightly painful, and many times has to be repeated.

For the occlusion of single dilated vessels electrolysis offers the speediest and most satisfactory method. A fine needle is attached to the negative pole of a battery containing at least ten cells, and the point inserted perpendicularly into the vessel. A well-moistened sponge electrode, attached to the positive pole, is held in the patient's hand and a current turned on according to his fortitude. Over a milliampere and a half is rarely required. Soon a white spot appears at the point of the needle, which rapidly extends into a line running along the vessel, which is then permanently occluded. This process is to be repeated according to the extent of the case. The immediate result is a slight local inflammation at the site of the puncture, which generally disappears in twenty-four hours. The pain is slight, though it varies in different patients. The same plan can be used with a bunch of needles instead of a single one when the affected surface is large, the needles being thrust barely through the skin and allowed to remain till a slight frothing takes place about them. Much the same effect can be produced by the application of the actual cautery in the shape of a hot needle or needles. It is too soon to say much about the cataphoretic method with the electrical current and a metallic soluble electrode, but it promises well. When such a multitude of things can be done, it is a pity so many cases should be allowed to get incurable from neglect.

153 EAST TWENTY-EIGHTH STREET

NOTES ON THE PEPTONIZING OR DIGESTIVE ACTION OF STERILE TISSUES OF ANIMALS.*

BY THEODORE SMITH, M. D.,
WASHINGTON, D. C.

In the course of the present year the writer's attention was called to this subject during the study of cultures made with rather large pieces of tissue from the organs of rabbits. After most of the facts to be recorded had been collected a few stray references which fell into my hands showed that this subject had been approached from

*From the pathological laboratories of the Bureau of Animal Industry.

several different directions by others. To these I shall refer after giving very briefly my own observations. These penetrate but slightly into the subject, which I must leave for extension and elaboration to those more favorably situated.

The first intimation that the normal, bacteria-free tissues of rabbits can liquefy the ordinary nutrient ten-per-cent. gelatin came in the following way: A male rabbit, weighing about four pounds, received April 10, 1894, into an ear vein 0.5 cubic centimetre of a bouillon culture of an artificial non-liquefying variety of *Proteus vulgaris*.^{*} The rabbit did not become manifestly ill, and when it was killed with chloroform on the thirteenth day no lesions were found. In order to determine whether the injected bacilli were still present in the organs, about a third of the spleen was dropped into a tube of bouillon and another third into a tube of gelatin. A piece of the liver equivalent to about half a cubic centimetre was dropped into another tube of gelatin. On the third day slight liquefaction around the piece of spleen was noticed, but no growth of bacteria. On the fifth day slight surface liquefaction was noticed in the liver tube. In both gelatin tubes there was indication of growth on the seventh day with characteristic swarming in one tube. Both contained *Proteus*. The simplest interpretation of the condition was that *Proteus* had regained its peptonizing function in the body of the rabbit. This hypothesis, *a priori* an improbable one, was disposed of by the fact that inoculation of fresh gelatin gave rise to a non-liquefying growth. Another hypothesis presented itself, to the effect that this culture of *Proteus* was still able to manufacture a peptonizing ferment from the animal tissues in which it happened to be. This could only be tested by experimenting with sterile tissues.

A large female roach was observed and taken when investigated as follows:

- No. 1. With almost a third of the volume.
No. 2. With almost a third of the volume.
No. 3. With a piece of 1100 (some equal in size to the 1100) of volume.

Legislation was observed on the second day, and was a prolonged, uninterrupted form of the surface where the same lay. In four days, legislation had progressed to—

- No. 1 to a depth of five millimetres.
No. 2 to a depth of one millimetre.
No. 3 to a depth of 1/2 millimetre.
On the contrary, the deep development had progressed in—
No. 1 to a depth of ten millimetres.
No. 2 to a depth of five millimetres.
No. 3 to a depth of 1/2 millimetre.

The *Trypanosoma* infection was accepted as the cause of the disease because the infected cells showed the characteristic morphology, and because of the fact that the disease disappeared when the infected cells were removed. After being shown that the disease agent was microcystic, the cells of 1-10 of the positive locusts were examined and found to contain flagellated cells, as described earlier. In the 3-10 cell stage, the flagellum was 1-2 μ long, and the nucleus about 1-2 μ in diameter. It was concluded that the

¹ For the origin of the name see the notes preceding the *Mathematical Treasury* and *Universal of the Philosophical Treasury* in *Library of Sacred Sciences in the Treasury of the Sacred Sciences*, *Journal of Theology*, 1974, 1, 100.

but much more slowly than a sterile control tube.

The activity of the liquefying power varies more or less from animal to animal. In the following it was quite weak.

- Nos. 1 and 2, from the spleen.
No. 3, from the liver.
No. 4, from a kidney.

Liquefaction was noticed after two days. It progressed very slowly, and after a month a layer of liquid gelatin from five to ten millimetres deep was present in the tubes. Subcultures made from Nos. 1, 2, and 4 remained sterile.

To determine whether the use of chloroform might develop or at least increase the peptonizing power of the organs, a rabbit weighing three pounds was killed by a blow and portions of the organs dropped into tubes of gelatin as follows:

- No. 1 received about a sixth of the spleen.
No. 2 received about a third of the spleen.
No. 3 received a piece of liver equivalent to that in tube No. 2.

These tubes were placed in the thermostat to hasten the peptonizing process. On the fourth day they were tested in ice water at 10°-12° C. No. 2 did not congeal at all. No. 1 congealed much more tardily than a control tube of the same gelatin. No. 3 became very thick. Subcultures from Nos. 2 and 3 remained sterile.

In addition to the cases cited and others of a similar character, the organs (spleen, liver, and kidneys) of four rabbits which had survived inoculation with an attenuated culture of hog cholera bacilli were utilized. In the cultures made from bits of organs in bouillon and on agar hog-cholera bacilli appeared. We may assume that they were present in all the gelatin tubes inoculated; their growth, however, is always very feeble in gelatin. Since they do not liquefy gelatin, the results obtained may be legitimately used to swell the number of experiments. It is scarcely necessary to give the details of these cases, as the cultures presented the same results as those obtained from the fully recovered when they were chloroformed.

To observe the action of a rabbit which had died during the night as a result of inoculation with virulent hog-cholera bacilli was used body infusing. The two animals which became liquefied quite more rapidly than had been expected with previous cases. Sometimes decomposition

The results obtained with these patients clearly show that they are suffering from a severe immunodeficiency. They show that the spread of infection is a result of suppression of the cellular immunological activity, not a lack of skin defenses as is still to be seen in a leprosy being treated with large doses of sulfonamide and/or penicillin. Thus, the level of CD4^+ T-lymphocytes in the patients treated first at the C. C. is lower than in the patients treated first at the C. S. is because of immunodeficiency. The patients treated first at the C. S. are immunologically competent. The patients treated first at the C. S. are immunologically competent. The patients treated first at the C. S. are immunologically competent. The patients treated first at the C. S. are immunologically competent.

The free-activated IL-1 α may be a proinflammatory protein.

various parts of the country. Prophylaxis being the highest aim of the true physician, anything that will throw light on the causation or spread of disease will awaken interest both in the profession and among the people.

That the typhoid bacillus is the cause of the fever has been until recently acknowledged by all authorities on the subject; as to how it is disseminated there seems to be some difference of opinion.

A London bacteriologist claims to have discovered other germs which he regards as the cause of the disease (*Lancet*). So far his claims have not been accepted. The tracing of the sources of infection in epidemics is frequently attended with considerable difficulty; in isolated cases it is often impossible. That the water and milk supplies are chief sources of danger in epidemics is conceded by nearly all observers, and yet some eminent men deny the importance attributed to these sources as carriers of the germs of the fever. There is in some portions of the country a fever differing in many respects from true typhoid, yet retaining enough of the symptoms to warrant its being called by that name. Some physicians call it typho-malarial, others regard it as true typhoid. It is on account of this fever that physicians are led to make the mistake of thinking the air the medium of infection and to attach little importance to water as the carrier of the typhoid bacillus. This so-called typho-malarial fever bears a very close resemblance to typhoid, but usually presents more of the malarial elements, less of the typhoid. In epidemics of typhoid fever, especially during seasons when the malarial poison is abundant in the air, there are always a great many cases of malarial fever so complicated with some of the symptoms of typhoid that a positive diagnosis is frequently impossible. In studying the subject in such localities it is extremely difficult to obtain accurate data, as physicians differ so regarding the fever; but in other sections where malarial fevers do not exist a better opportunity for study would be afforded. I have had an opportunity of seeing typhoid fever in mountainous regions where no malarial fever exists. In one neighborhood in a large mining community there were forty cases confined to the immediate locality and none in other portions of the town. These cases had one object in common, to wit, to be on a hill somewhat above the others. The dejecta were thrown into an outhouse above a well from which the people of the neighborhood obtained their water for drinking and cooking. In another village of the same county there was an epidemic of typhoid fever resulted from the water taken from a well on the bank of a small mountain stream establishment. So evident was it that this was the source of infection that only men and boys employed in these works were attacked while men and women there were getting their drinking water from another source were not affected. The other members of the community were not so exposed. A very interesting feature in this epidemic is a small stream. This stream's water was thrown into a closet over a small stream which empties into a river, the water supply for a large town. The water became filthy and a fatal epidemic broke out, resulting in the loss of many lives.

Another case which came under my observation as health officer of this city was from the careless cleaning of an outhouse. There had been a case of the fever in the family to whom this closet belonged some months previous. In cleaning the outhouse a portion of its contents was spilled on the ground and permitted to remain for some time before the fact was made known to the authorities. It was a wet season, and in a short time a considerable portion was washed into the ground. The closet mentioned is on a hill, and below it are several wells from which the people of the neighborhood obtain their drinking water. Following this occurrence a number of cases of fever developed in this immediate locality, due undoubtedly to the cause mentioned.

From these cases can be readily seen the direct mode of spread of the bacillus which causes the disease. The malarial poison not being a factor, it was easy to trace the course of the typhoid germ and its entrance into the systems of those affected. A good lesson in preventive medicine may be learned from the epidemics which have been mentioned.

Had the dejecta of the first patient spoken of been disinfected and buried, all the other cases which followed could have been prevented. In the instance of the case which occurred in a large town causing such a severe epidemic, proper precautions would have prevented much suffering and loss of life. Three things are of the greatest importance to prevent the spread of the bacillus: Analysis of all water supplies, and if any are found contaminated they should be discontinued; boiling all water used for household purposes; and disinfecting and burying away from water courses the stools of patients affected with the disease. By these means much may be done to prevent the spread of typhoid fever.

REPORT OF A CASE OF AMEBIC DYSENTERY, WITH SCARCARD'S TEST.

By GEORGE L. PRESTON, M. D.

PHYSICIAN IN CHARGE, CITY HOSPITAL.

AND JOHN KUNAH, M. D.

ASSISTANT PHYSICIAN, CITY HOSPITAL, BOSTON, AND BOSTON.

Read before the Boston Medical Society, at a meeting held at the City Hospital, Boston, May 1, 1894.

The patient, Samuel, aged thirty, and his previous history was as follows:—He had been in the City Hospital for the treatment of a case of typhoid fever, and had been discharged on May 1, 1894.

After a few days' rest, he returned to his home, and on May 10, 1894, he was again admitted to the City Hospital, suffering from a case of amebic dysentery.

On May 10, 1894, the patient was admitted to the City Hospital, suffering from a case of amebic dysentery. He had been in the City Hospital for the treatment of a case of typhoid fever, and had been discharged on May 1, 1894.

During the treatment of this case, the following facts were observed:

enlighten the court, together with a desire on the part of the court to give the defendant every opportunity to save his mental condition.

The foregoing proceeding, so far as the author has been able to learn, is without precedent, but whether this is the case or not—and we know it is not—he trusts that it may be one step in advance toward the adoption of some practical plan that will enable the expert to appear in court in such a manner that his independent judgment may be secured, for which service he should be paid a suitable compensation by an order of the court.

Dr. W. W. Godding, of Washington, commenting on Dr. Chapin's paper, remarks in the same journal that he is glad of the departure, and says he feels that the courts in the District of Columbia have taken a step in advance and established a precedent for humanity in every case where the question of the insanity of the convict is raised. No condemned man who is really insane, he says, needs to hang in the District of Columbia. When three able and impartial experts have passed upon his sanity, we have a right to say that the convict has had all the protection which is possible. Even if he should appear a little strange at the scaffold, it would be far more reasonable to attribute his conduct to his eccentricities than to suppose that the experts had made a mistake.

In the same journal Dr. E. N. Brush, of Towson, Md., relates in detail the case referred to by Dr. Chapin, and says that an anomalous feature of the order, which appears in Dr. Chapin's paper, is that portion which directs the commission to examine the prisoner, take the evidence of the guards and others, and then appear in court to hear the other witnesses and the experts called by the counsel for the prisoner, after which they are to file their opinion under oath. It is natural to suppose that a commission of this kind is composed of experts, and that was so in this case. Why, he asks, should experts be called to the court for the prisoner? If the majority of medical men agreed, such a concurrence of opinion would be very desirable. If, on the contrary, they disagreed, and the commissioners refused to be moved by the opinions of the experts, it would be better to have the prisoner brought before a court of receiving the opinions of three witnesses upon one side and the witnesses of the other side.

The whole question of the best method to be followed, be it by means of the (1) or (2) method, is a question of observation or silver counts, and appears to be still to be solved. The problem is a difficult one and presents many

1770/1771 1772/1773 1774/1775 1776/1777 1778/1779 1780/1781 1782/1783 1784/1785 1786/1787 1788/1789 1790/1791 1792/1793 1794/1795 1796/1797 1798/1799 1800/1801 1802/1803 1804/1805 1806/1807 1808/1809 1810/1811 1812/1813 1814/1815 1816/1817 1818/1819 1820/1821 1822/1823 1824/1825 1826/1827 1828/1829 1830/1831 1832/1833 1834/1835 1836/1837 1838/1839 1840/1841 1842/1843 1844/1845 1846/1847 1848/1849 1850/1851 1852/1853 1854/1855 1856/1857 1858/1859 1860/1861 1862/1863 1864/1865 1866/1867 1868/1869 1870/1871 1872/1873 1874/1875 1876/1877 1878/1879 1880/1881 1882/1883 1884/1885 1886/1887 1888/1889 1890/1891 1892/1893 1894/1895 1896/1897 1898/1899 1900/1901 1902/1903 1904/1905 1906/1907 1908/1909 1910/1911 1912/1913 1914/1915 1916/1917 1918/1919 1920/1921 1922/1923 1924/1925 1926/1927 1928/1929 1930/1931 1932/1933 1934/1935 1936/1937 1938/1939 1940/1941 1942/1943 1944/1945 1946/1947 1948/1949 1950/1951 1952/1953 1954/1955 1956/1957 1958/1959 1960/1961 1962/1963 1964/1965 1966/1967 1968/1969 1970/1971 1972/1973 1974/1975 1976/1977 1978/1979 1980/1981 1982/1983 1984/1985 1986/1987 1988/1989 1990/1991 1992/1993 1994/1995 1996/1997 1998/1999 2000/2001 2002/2003 2004/2005 2006/2007 2008/2009 2010/2011 2012/2013 2014/2015 2016/2017 2018/2019 2020/2021 2022/2023 2024/2025 2026/2027 2028/2029 2030/2031 2032/2033 2034/2035 2036/2037 2038/2039 2040/2041 2042/2043 2044/2045 2046/2047 2048/2049 2050/2051 2052/2053 2054/2055 2056/2057 2058/2059 2060/2061 2062/2063 2064/2065 2066/2067 2068/2069 2070/2071 2072/2073 2074/2075 2076/2077 2078/2079 2080/2081 2082/2083 2084/2085 2086/2087 2088/2089 2090/2091 2092/2093 2094/2095 2096/2097 2098/2099 2100/2101 2102/2103 2104/2105 2106/2107 2108/2109 2110/2111 2112/2113 2114/2115 2116/2117 2118/2119 2120/2121 2122/2123 2124/2125 2126/2127 2128/2129 2130/2131 2132/2133 2134/2135 2136/2137 2138/2139 2140/2141 2142/2143 2144/2145 2146/2147 2148/2149 2150/2151 2152/2153 2154/2155 2156/2157 2158/2159 2160/2161 2162/2163 2164/2165 2166/2167 2168/2169 2170/2171 2172/2173 2174/2175 2176/2177 2178/2179 2180/2181 2182/2183 2184/2185 2186/2187 2188/2189 2190/2191 2192/2193 2194/2195 2196/2197 2198/2199 2200/2201 2202/2203 2204/2205 2206/2207 2208/2209 2210/2211 2212/2213 2214/2215 2216/2217 2218/2219 2220/2221 2222/2223 2224/2225 2226/2227 2228/2229 2230/2231 2232/2233 2234/2235 2236/2237 2238/2239 2240/2241 2242/2243 2244/2245 2246/2247 2248/2249 2250/2251 2252/2253 2254/2255 2256/2257 2258/2259 2260/2261 2262/2263 2264/2265 2266/2267 2268/2269 2270/2271 2272/2273 2274/2275 2276/2277 2278/2279 2280/2281 2282/2283 2284/2285 2286/2287 2288/2289 2290/2291 2292/2293 2294/2295 2296/2297 2298/2299 2300/2301 2302/2303 2304/2305 2306/2307 2308/2309 2310/2311 2312/2313 2314/2315 2316/2317 2318/2319 2320/2321 2322/2323 2324/2325 2326/2327 2328/2329 2330/2331 2332/2333 2334/2335 2336/2337 2338/2339 2340/2341 2342/2343 2344/2345 2346/2347 2348/2349 2350/2351 2352/2353 2354/2355 2356/2357 2358/2359 2360/2361 2362/2363 2364/2365 2366/2367 2368/2369 2370/2371 2372/2373 2374/2375 2376/2377 2378/2379 2380/2381 2382/2383 2384/2385 2386/2387 2388/2389 2390/2391 2392/2393 2394/2395 2396/2397 2398/2399 2400/2401 2402/2403 2404/2405 2406/2407 2408/2409 2410/2411 2412/2413 2414/2415 2416/2417 2418/2419 2420/2421 2422/2423 2424/2425 2426/2427 2428/2429 2430/2431 2432/2433 2434/2435 2436/2437 2438/2439 2440/2441 2442/2443 2444/2445 2446/2447 2448/2449 2450/2451 2452/2453 2454/2455 2456/2457 2458/2459 2460/2461 2462/2463 2464/2465 2466/2467 2468/2469 2470/2471 2472/2473 2474/2475 2476/2477 2478/2479 2480/2481 2482/2483 2484/2485 2486/2487 2488/2489 2490/2491 2492/2493 2494/2495 2496/2497 2498/2499 2500/2501 2502/2503 2504/2505 2506/2507 2508/2509 2510/2511 2512/2513 2514/2515 2516/2517 2518/2519 2520/2521 2522/2523 2524/2525 2526/2527 2528/2529 2530/2531 2532/2533 2534/2535 2536/2537 2538/2539 2540/2541 2542/2543 2544/2545 2546/2547 2548/2549 2550/2551 2552/2553 2554/2555 2556/2557 2558/2559 2560/2561 2562/2563 2564/2565 2566/2567 2568/2569 2570/2571 2572/2573 2574/2575 2576/2577 2578/2579 2580/2581 2582/2583 2584/2585 2586/2587 2588/2

A. C. GILLESPIE, JR., MARY L. JOHNSON AND JAMES H. ...

THE *Therapsid* method suggests to me the possibility of just such a view about the conditions of the present, and thus the cause of a crisis. One can imagine why mankind is present outside in the case of danger. The present, which I would personally had not been from the present, but which he would be in the case of such *Therapsid* (which is a different way, with the

whatever but the ash of Havana cigars. This was found to be the case both by chemical and by microscopical examination. Some persons affected with dropsy professed to have derived benefit from the use of the powder. However, says our contemporary, when it is borne in mind that the charlatan, whenever he sold a package, instructed the purchaser to drink freely of certain well-known diuretics, it is unnecessary to inquire further into the way in which the alleged effects of the remedy were produced.

FIGURE 15. AN INDEPENDENT

THE *Lyon médical* states that the habit of getting drunk on ether, which originally came from England, has existed in France for the last five or six years. The number of persons addicted to this form of debauchery seems to be growing greater, and cases are not uncommon in which persons drunk with ether are arrested in the streets.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 6, 1894:

DISEASES	Week ending Oct. 30		Week ending Nov. 6	
	Cases	Deaths	Cases	Deaths
Epidioid fever	27	12	27	6
Scarlet fever	72	2	30	6
Orchidopharyngitis	3	0	0	0
Mumps	12	7	18	4
Diphtheria	2	2	18	10
Stomatitis	11	0	1	0
Total	185	198	92	22

[illegible]

LAUDERDALE, JOHN V., Major and Surgeon, is granted leave of absence for four months, to take effect upon the final abandonment of Fort Ontario, New York.

Naval Intelligence.—*Official List of Changes in the Medical Service of the United States Navy for the year ending November 3, 1894:*

DUMBER, A. W., Assistant Surgeon. Ordered to the Naval Laboratory and Department of Instruction.

FAEENHOLT, ARNEX, Assistant Surgeon. Detached from the Naval Laboratory and Department of Instruction and ordered to the U. S. Receiving-ship Vermont.

STONE, L. W., Assistant Surgeon. Detached from the U. S. Receiving-ship Vermont and placed on waiting orders.

HOPKINS, J. S., Assistant Surgeon. Transferred from the Naval Hospital, Mare Island, California, and ordered home.

DICKINSON, DWIGHT, Surgeon. Detached from the U. S. Steamer Miantonomoh and ordered to the U. S. Steamer Richmond.

Marine-Hospital Service.—*Official List of Changes in the Medical Service of the United States Navy for the year ending November 3, 1894:*

BAIRNACHE, P. H., Surgeon. To report at Bureau for special assignment for 1895. October 19, 1894.

PURVIANCE, GEORGE, Surgeon. Granted leave of absence for five days each. October 2, 1894, and October 29, 1894.

HAYES, W. L. H., Surgeon. To proceed to the U. S. Marine Hospital, Baltimore, Md. October 24, 1894.

SAWTELLE, H. W., Surgeon. When relieved from duty at Boston, Mass., to proceed to New Orleans, La., for duty. October 10, 1894.

GREENBERG, J. M., Surgeon. When relieved from duty at New Orleans, La., to proceed to Cairo, Ill. October 27, 1894.

IRWIN, FAIRFAX, Surgeon. To report at Bureau. October 19, 1894.

MEAD, F. W., Surgeon. To proceed to New York, N. Y., for temporary duty. September 24, 1894.

WATSON, J. P., Passed Assistant Surgeon. To proceed to the U. S. Marine Hospital, Baltimore, Md. October 19, 1894.

PECKHAM, C. T., Passed Assistant Surgeon. Granted leave of absence for six months. October 10, 1894.

GREENBERG, A. T., Passed Assistant Surgeon. Granted leave of absence for six months. September 20, 1894.

BRADY, S. D., Passed Assistant Surgeon. To proceed to New York, Mich., as inspector. October 26, 1894.

MILLER, W. S., Passed Assistant Surgeon. Granted leave of absence for six months. October 10, 1894.

GREENBERG, H. D., Passed Assistant Surgeon. Detached from the U. S. Marine Hospital, Baltimore, Md. October 10, 1894.

GREENBERG, C. H., Assistant Surgeon. To proceed to the U. S. Marine Hospital, Baltimore, Md. October 10, 1894.

GREENBERG, J. A., Assistant Surgeon. Granted leave of absence for six months. September 20, 1894.

GREENBERG, W. J., Assistant Surgeon. Granted leave of absence for six months. September 20, 1894.

GREENBERG, T. M., Assistant Surgeon. Granted leave of absence for six months. September 20, 1894.

GREENBERG, J. A., Assistant Surgeon. Granted leave of absence for six months. September 20, 1894.

GREENBERG, J. A., Assistant Surgeon. To proceed to New York, N. Y., for temporary duty. October 25, 1894. To rejoin station at Baltimore, Md. November 2, 1894.

SPRAGUE, E. K., Assistant Surgeon. Granted leave of absence for thirty days. October 10, 1894. When relieved from duty at Cairo, Ill., to proceed to Mobile, Ala., for duty. October 29, 1894.

THOMAS, A. R., Assistant Surgeon. To proceed to Cairo, Ill., for temporary duty. October 5, 1894.

GREENE, J. B., Assistant Surgeon. To proceed to New York, N. Y., for duty. October 27, 1894.

JOSEPH B. GREENE, of Alabama, commissioned by the President as an assistant surgeon. October 24, 1894.

Society Meetings for the Coming Week:

(Section in General Surgery): New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynaecological Society of Boston; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, November 13th: Southern Surgical and Gynaecological Association (first day—Charleston, S. C.); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union* (private); Kings County, N. Y., Medical Association; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., and Trenton, N. J. (private), Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Baltimore Gynaecological and Obstetrical Society; Practitioners' Club, Richmond, Ky.; Camden, N. J., County Medical Society (semi-annual—Camden); Norfolk, Mass., District Medical Society (Hyde Park).

Wednesday, November 14th: Southern Surgical and Gynaecological Association (second day); New York Surgical Society; New York Pathological Society; Metropolitan Medical Society (private); American Medical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, November 15th: Southern Surgical and Gynaecological Association (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, November 16th: New York Academy of Medicine (Section in Orthopedic Surgery); Baltimore Clinical Society; Chicago Gynaecological Society.

Saturday, November 17th: District Medical Society of the City of New York; New York Medical Society (private).

Letters to the Editor.

OFFICIAL REPORT OF ACADEMY.

The Academy of Medicine, New York, has just published its report for the year 1893-1894. The report is a valuable contribution to the literature of the Academy and to the history of the medical profession in New York. It contains a full and complete account of the work of the Academy during the year, and is a most interesting and instructive read.

thorough article by Dr. F. W. Mott (*Brit. Med. Jour.*, September, 1893). He also referred to an article on this subject by Dr. Hale White (*Lancet*, September, 1893); by Professor Schaefer, and by Victor Horsley (*Nineteenth Century*, June, 1891).

The clinical and pathological evidence presented by the speaker consisted of a number of cases collected from literature and three cases of his own. The first of these latter cases was that of a man, aged forty-six years, who had had syphilis ten years before. There had afterward been headache, convulsions of the left side of the body, followed by general convulsions, and coma. Recovery from the convulsions had been followed by complete left hemiplegia and hemianesthesia and death. The autopsy had shown a syphilitic gumma of the dura mater pressing into and involving the central convolutions. The gumma had been located about the middle portion of the fissure of Rolando, and had been about an inch and a half in diameter.

The second case was that of a man, aged fifty-five years, with a history of syphilis. Gradually right hemiplegia had come on, the paralysis being considerable in extent and associated with some loss of tactile and pain sensibility on the right side, and death had resulted. A tumor of the size of a hen's egg was found in the middle of the left ascending frontal convolution.

The third case was one of Jacksonian epilepsy, with paralysis of the left arm, sensory troubles, headache, and optic neuritis. An operation had been followed by improvement of the symptoms. Among other reports of cases cited by Dr. Dana were the following: By Dr. D. A. K. Steele, *Jour. of the Amer. Medical Association*, January, 1894; by Dr. Frank S. Madden, *Jour. of Nerv. and Ment. Dis.*, December, 1893; by Dr. H. B. Jones, *Australian Med. Jour.*, July, 1893; by Dr. P. C. Knapp, *International Journal of Surg.*, Dec. 1, 1890; by Dr. J. M. Allen Starr, vol. ix, 1890; and by Dr. M. Allen Starr, *Brain Surgery*, Cases 5 and 18.

In all our cases (apart from Dr. Frank House, who had some sensory disturbances in parts of the body) we found that the pain was caused by a sensory lesion, and the skin was firm in both anterior and posterior central convolutions. The localization was the one oftenest observed, in that the patient could not recognize the location of a point inserted. This was generally indicated by the term tactile anesthesia. With almost equal frequency the cases in which the fingers were unable to grasp objects, or that some objects and others could not be manipulated in this way. This was due to a loss of the tactile sensibility in certain parts of the hand. As the tactile sensibility of certain parts of the hand after the nature of the contact or pressure was abolished. Next in frequency we took cases of pain and thermal sensation. There seemed to be no doubt that some localization could be assigned to the projection of the motor cortex, and some hyperalgesia by its irritation.

[illegible]

quired to affect them. The greater sensitiveness and co-ordinative power of the right side was in harmony with the fact that the special sense memories were better represented in the left cerebrum.

The author stated that it did not follow from what he had said that he subscribed to the doctrine of Bastian and others who believed that the central convolutions were sensory centers. These were essentially motor. To say that the motor cortex was sensory-motor was not enough, for it did not imply the fact that the cortex represented sensations and also memories of sensations. It was in fact a sensory-memory-motor organ. It was not probable that muscular sensations and memories were diffused over the motor cortex as perfectly as the tactile were. All clinical and anatomical evidence showed that the post parietal region, especially the inferior parietal, was the center for muscular memories, and that when it was diseased, most striking disorders of muscular sense occurred. Hence it might be that the simple muscular sensations were represented chiefly here, and that the memory centers for movements were co-extensive with the motor cells, just as there was a center for visual sensations in the cuneus, and for certain visual memories in the angular gyrus.

Dr. E. C. SEGGIN said the character of Dr. Dana's paper was such that it could hardly be discussed in an offhand way. One point that had occurred to him during the reading of the paper was that our methods of studying the sensibility of the skin and muscles in cases of cerebral paralysis were far from systematic or perfect. More particularly was this true with reference to the detection of slight alterations of the cutaneous tactile sense. We attached too much importance to the distance at which the patient could distinguish one point from another, and we were apt to neglect the more delicate contact tests for tactile sensations, which were so often impaired in cases of cerebral paralysis. The imperfections of our methods in this respect, Dr. Seggin said, would lead him to agree with the author of the paper that in many of the cerebral cases in which anesthesia was reported absent, its presence was really overlooked.

Many observers confounded the various modes of tactile sensibility and the muscular sense, strictly speaking, and on this account some cases had been incorrectly observed, by inferring from certain tests which really applied to the tactile sensibility of the skin that the consciousness of the muscular movements, of their force and direction, was lost.

With reference to the theoretical part of the question brought up in the paper, Dr. Seguin said he felt very much disinclined to return to the old theory ascribing a sensory-motor function to the motor cortex. There was no anatomical evidence that the sensory fibers of the motor cortex terminate to the centers but rather to the periphery, and the fibers to the centers had their termination in any cells or groups of cells. The cells of the sensory apparatus were at the periphery, and as the fibers proceeded centripetally they subdivided into elements of the sensory apparatus which increased and became more complex the more and higher centers there was connection with the afferent current. With regard to the question of the nature of the sensory-motor function of the motor cortex, he was surprised if the function of common or tactile sensibility was found in the motor cortex rather than in the sensory cortex. He had no doubt that the motor cortex was a motor center, and he had no doubt as to the fact that the motor cortex was a motor center, and he had no doubt as to the fact that the motor cortex was a motor center.

Dr. M. Acker stated that in practice it was not difficult to find the conditions by which the cell could be made to perform, within the considered time, the desired thermodynamic processes, more frequently and with its assistance with the aid of control instruments. He had his laboratory ap-

pared to report the case, but the sensory and motor centers were coincident. The following case, showing that the muscular sense might be lost from a cortical lesion, without paralysis, had recently come under his observation. The patient was a young man who had entered the Presbyterian Hospital last February. Four years previously he had received a severe blow on the head, followed by very intense headache at the point where the blow had been received. This had been on the left side of the head, about an inch and a half from the median line, and two inches and a half posterior to the fissure of Rolando. In addition to the headache he was subject to attacks epileptic in character—not cortical epilepsy, the man having had no convulsions, but psychical epilepsy. He had acute maniacal attacks, lasting about fifteen minutes; after such an attack he would fall asleep and, on awakening, have no memory of what had occurred after the onset of the attack. These attacks had become more frequent, incapacitating him for his work and making his life a burden to himself and his friends. He had no paralysis; no anæsthesia of any kind, tactile, temperature, pain, or muscular. It was decided to operate for this condition. An opening two inches in diameter was made in the skull by Dr. McCosh, an inch and a half to the left of the median line and two inches and a half posterior to the fissure of Rolando, and an angiomatic mass, consisting of a collection of veins, about three quarters of an inch in diameter, was discovered. The larger vessels leading into this were tied off and the mass was removed. As soon as the patient came out from the ether, the house physician noticed a peculiar awkwardness of the fingers and hand on the right side. On examination, it was found that as a result of the operation a most complete ataxia of the right hand up as far as the elbow had supervened. He was unable to feed himself or carry a glass to his lips. The motions made with that hand were irregular and extremely ataxic. There was no disturbance of the tactile, pain, or temperature sense. There was no disturbance of the power of locomotion, and the other extremities were controlled. He was unable to reproduce with his right hand the position given to the left, and, in consequence of this, the right hand had been much improved at the end of six weeks and had entirely disappeared after three months. This case, the speaker said, illustrated the localization of the muscular sense in the parietal lobe, and showed it to be entirely distinct from the tactile, temperature, and pain senses, and from the motor power. He agreed with Dr. Seguin that we must accept the localization of the sensory process. We must accept the idea that sensory impressions coming in from the skin passed upward through the spinal cord, the medulla oblongata, and the posterior part of the internal capsule, being distributed by means of collateral fibers to all the various parts of the gray matter, and that they probably had their terminal radiations in the posterior central convolution, not in cells, but in a fine terminal network. This in turn in-

which the lesion had been found in the motor area of the brain, he thought he had been able to detect some impairment of the tactile sensibility (rendered somewhat dubious by the habits of the patient), and in one case, in which the lesion had been in the vicinity of the ascending parietal convolution, there had been marked impairment of the muscular sense. The speaker said that he was fully in accord with the statement made by one of the speakers that our present methods of detecting a loss of tactile or muscular sensibility were not sufficiently exact; the asthesiometer certainly did not answer the purpose.

The PRESIDENT said that he agreed with Dr. Seguin that the examination of patients with cerebral lesions was frequently too cursory, and that in many cases a careful examination would no doubt disclose some disturbance of muscular or tactile sensibility. The method of ascertaining the cutaneous sensibility by means of two pin points he had long ago abandoned, as it was very unreliable and the results would differ even in a healthy person. It was certain, as Dr. Dana had stated in his paper, that in some cases of cerebral lesions no disturbances of sensibility were present—at least to any marked degree. In a case recently under his observation, in which the lesion had been essentially confined to the cortex, the patient had had epileptic seizures limited to one side of the body, and there had been at no time any tactile or muscular disturbance or any motor weakness.

Dr. DANA said that he did not agree with Dr. Gray that thus far no progress had been made toward the localization of cutaneous sensations. Many cases on record in which a certain portion of the cortex had been excised, and as a result there had been paralysis and anæsthesia in the region controlled by that cortical area. In his paper he had only attempted to show that the cutaneous and muscular sensibilities had a representation of some kind in the areas of the brain that were known as motorial. Whether there was a definite special sensory center in this region he did not pretend to say. We did know that all the clinical and pathological evidence at our command pointed to this part of the brain and no other as the seat of these cutaneous disturbances.

The Charcot Memorial.—Dr. STARR stated that an effort was being made in France to raise a fund for the erection of a statue of Charcot as a memorial of his scientific work. This movement had been taken up with interest by Charcot's pupils in Germany, Italy, and other parts of the continent, and committees had been appointed to solicit subscriptions and forward them to the treasurer of the fund in Paris. He said that, as there were probably many gentlemen in this country who were indebted to Professor Charcot and who were attached to his memory by their personal acquaintance with the man, it seemed to him appropriate that the New York Neurological Society should participate in this movement, and appoint a committee to solicit contributions to this fund. He made a motion to this effect, which was unanimously carried.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Saturday, January 10, 1896, held at Washington, D. C., on Washington, Thursday, and Friday, May 10 and 11 and June 1, 1896.

The President, Dr. D. B. BROWN, D.D., of New York, in the Chair.

Papillary Hypertrophy of the Nasal Mucous Membrane compared with Papillary Fibroma or Papilloma.—A paper

read by Dr. J. C. WELLS, of Brooklyn, New York, June 1, 1896.

Dr. H. L. SWAIN, of New Haven, said that he had certainly been rather bold to attempt to add anything to the most masterly by Dr. Wright. Years ago he had seen a case of papilloma which had presented similar gross appearances. They had differed, however, microscopically. One had been from the larynx and the other from the ear. The latter had corresponded with some of Dr. Wright's drawings from the nose. He thought Dr. Wright's classification of tumors in the nose was very apt.

Report of a Case of Epithelioma and of One of Sarcoma of the Larynx. Dr. AUGUST AMES BRISS, of Philadelphia, read a paper with this title. (See page 582.)

Dr. DE ROALES said he would in such cases advise the use of bromide of ethyl preliminary to using chloroform. It was less irritating to the air-passages and almost suppressed the period of excitement and thereby reduced to a minimum the danger of spasm of the glottis. In less than a minute the patient was relaxed, and the anaesthesia was then kept up with chloroform.

The PRESIDENT was glad that Dr. Roaldes had called attention to the use of bromide of ethyl. The anæsthetic had been introduced into New York city in 1879 and given a fair trial at one of the largest hospitals. It had been pronounced unsatisfactory and had been abandoned. It was to be hoped that of late years it had become possible to manufacture a better article. This indeed seemed to be the case, as those who had lately employed it had been favorably impressed.

Exudative Pharyngitis.—Dr. W. C. GLASGOW, of St. Louis, read a paper on this subject. (See page 102.)

Dr. JONATHAN WRIGHT, of Brooklyn, said he was very much interested in this question of "streptococcus throat," as Dr. Glasgow had called it. He doubted very much if there were any significance in the finding of streptococci in this lesion, because they had been found on patients with several typhoids, and they were found in diphtheria. It seemed to him that the surgeon should consider other factors than this as the cause of the lesion. He was not able to get through the literature on this subject reported in Philadelphia, St. Louis, and Baltimore, and had not been one as yet in New York, notwithstanding its wealth of clinical material.

Dr. GLASGOW asked to be allowed to cite an instance bearing on the treatment of such by Dr. WRIGHT. A few persons are known to have been treated by Dr. LANGE. He had lost all power in the right arm and the right leg, and he had lost the use of the right eye. It was stated that he had come from Stockholm. His symptoms have been said to be completely resolved and permanent. After being some treatment the two eyes he was able to see well as usual. He had the use only in Stockholm. The patient said he had been there being all power in the right arm and the right leg and the right eye.

A Case of Sarcoma of the Tonsil.—Dr. A. W. WAT-

Importance of an Early Diagnosis of Malignant Tumors of the Throat—16 of 25 (64%) cases of laryngeal cancer in Japan, and 10 of 20 (50%) cases of pharyngeal cancer in Japan, died within 1 year.

The Theoretical and Oak Hill, views of the River of the Cape are beautiful and every person using the mountain service, and the mountain railway for some of its scenic views, is sure of good return for his money, especially the value of the method really used. That for the mountain had some half-century ago, it is normal and happy of human interest in the distance.

Dr. Davidson's *Diagnosis* is not just the patient's story, very much as the *Handbook* is not just the doctor's summary of what happened. Each book traces the patient's *experience* of the illness from the inside. The *Handbook*

element was in the diagnosis. In nearly every case of tuberculosis or cancer the great cry was, "We did not see the case early enough!" In the early stage of epithelioma it was often extremely difficult to make a diagnosis. It was in many cases necessary to wait until the microscope decided whether it was a carcinoma or a basal cell carcinoma. The same was true of sarcoma. But even today there are a number of mistakes in diagnosis until the clinical history had made it evident. There certainly were some cases of sarcoma and carcinoma reported as cured where there was a mistake in diagnosis. It must have occurred to those who had been fortunate enough to discover their error in diagnosis before operating that there must be a great many cases operated upon and reported as cured in which there was really no malignant disease.

Regarding the injections of streptococci or of their toxins the speaker said that there were many cases reported in which the patients had received injections and no reactionary results at all had been obtained. In some cases it was justifiable to use almost anything. It was the height of cruelty to tell a patient you could do nothing for him. Something should be done, even if the patient were to die on the operating table.

DR. H. L. SWAIN, of New Haven, said that the last speaker had mentioned a good many things which he had intended to say regarding the difficulty of making an early diagnosis. It was all very well to say that all cases should be seen early. He recalled a case which he had just reported where the patient had originally suffered from benign tumor of the larynx. Examination revealed one year later an ulcerative condition of the larynx and a swelling of the parts where the benign tumor of the vocal cord had been. The patient had also developed a cough. The patient was kept under observation for three months. The malignant growth developed rapidly, and only by obtaining a piece of it with great difficulty at the end of this time and examining it in sections an absolute diagnosis was reached. Three months had thus elapsed. In the removal of the growth the larynx was removed, and the operation conducted as described in his paper of yesterday. He had had some experience with operations upon the larynx, and if he would do it in this same way. He had lately seen three such operations. One died of septic pneumonia. In the other two cases thyroectomy was performed, and every portion of the growth, which was circumscribed, was removed thoroughly. The growth returned in less than six months. To remove the whole growth in the case related it became necessary to do laryngectomy. This patient was now very well and would soon be able to talk distinctly. By this method of operation

[illegible]

trance of food while masticating; the latter, of course, could be prevented by inserting a wooden plug.

Dr. MERRILL asked why it could not be packed with iodoform gauze.

Dr. DALY replied that the treatment was so often prolonged, and for the patients to pack the antrum themselves was a very inconvenient procedure, and all patients could not or would not do it for themselves. There was this to be said in favor of the small opening: that it lessened the entrance of air and food. Moreover, if the opening were made large, there would be difficulty in closing it by a subsequent operation. Those who would follow this advice and use a small opening would profit by his long experience.

Dr. HINKEL asked if he were referring to the treatment of acute cases only.

Dr. DALY replied that he was referring to all cases.

(To be continued.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 26, 1894.

(Continued from page 595.)

Massage versus Removal of the Sound-conducting Apparatus in Non-suppurative Cases of Disease of the Ear.—

This was the subject of a paper by Dr. LOUIS J. LAUTENBACH, who said that it had of late years become more and more evident that the symptoms of defective hearing, tinnitus, and vertigo, when not due to a disease of the auditory nerve, were occasioned, not by a pathological drumhead, but rather by some lesion in the sound-conducting apparatus. The ossicles, instead of being freely movable, one upon the other, were more or less rigid from abnormal attachments between them, or the walls of the middle-ear cavity, or both. In consequence of these attachments the movement of the ossicles had been disturbed and the stapes was driven into the oval window, often ankylosed, causing pressure on the labyrinth. This pressure on the labyrinthine fluid occasioned the periodical vertiginous symptoms as well as the tinnitus, the defective hearing being due to the rigidity of the conducting apparatus and the contraction of the ossicular arch. This conducting apparatus might be compared to the hammer and anvil of a piano. When the key was depressed, if the joints of the levers were freely movable the hammer struck the vibrating string; but should there be any rigidity in the mechanism, the key must be struck with more force to produce the same effect.

The membrana tympani, to which formerly such supreme importance had been given as the essential to hearing, was now known to be of little value in this respect, serving as the outer

one upon the other, with the consequent changes brought about as to the nutrition of their joints, from the friction and the increased circulation. It aimed to increase the length of the shortened ossicular arch, and also to draw out into a normal position a retracted or adherent membrane, while at the same time it endeavored to loosen a jammed stirrup or one more or less adherent to the oval window. In addition to this, pneumo-massage slightly influenced the round window and the internal-ear fluids within, and likewise exerted some effect on the upper end of the Eustachian tube, as well as the entire mucous lining of the middle-ear cavity. Its action was mild and regular, simulating the effects of a well-trained masseur. It stimulated the parts, put the mucous membrane into healthier condition, hastened the absorption of all morbid deposits, and gave to the muscles and ligaments their normal activities, and at the same time amplitude to the joint movements. Its action being a drawing out of the drumhead, with a corresponding outward motion of the attached ossicles, was therefore directly opposite to that produced by air-concussions and loud sounds, which so often, especially when continuous, occasioned ear diseases, the whole tendency of modern ear use, due to the multiplicity of slops, factories, etc., being to drive in the drumhead and jam the stirrup in the oval window.

This method was not one of destruction, but of construction; it removed nothing; it allowed the parts to remain intact, while it gave to them normal exercise of the muscles, ligaments, and articulating surfaces, and an increased and healthier circulation with correspondingly increased and healthier secretions.

The practical deductions which Dr. Lautenbach had reached as the result of his use of ear massage were:

1. The method was not difficult to apply, and could be used by any one who had a proper conception of the structure and functions of the ear with a knowledge of the pathological conditions present.
2. There was no risk. It had never occasioned harm or made the symptoms worse, nor did it in any way interfere with other treatment.
3. Should it fail in accomplishing the desired result, it did not prevent the use of further measures.
4. It had improved the hearing in over ninety per cent. of his cases.
5. In about ninety per cent. the tinnitus had been relieved.
6. It had perhaps in a little over half removed the vertiginous symptoms.

Ossicular removals aimed to relieve the same conditions by destroying the continuity of the conducting apparatus by taking out either one or more of the ossicles to the outer side of the ankylosis, usually removing at least one of the ossicles of the ankylosed joint. Of late years this had been modified by, in addition to removing one or more of the ossicles, mobilizing the remaining bone or bones.

As to the practical value of these operations there was considerable difference of opinion among operators, but the speaker believed the following statements would meet with little or no opposition from the impartial observer; they were formulated from the observations and results of many operators:

1. These operations were difficult. They required considerable skill and experience. Often the operator was not able to do what he was doing, but must do it in a very cautious way. They should be resorted to for the ear operation, as being the one most to be feared with the least definite work.
2. The cases were rare. Cases of permanent facial palsy, permanent vomiting, and even death had occurred, whereas temporary palsy, acute inflammations of the middle ear and other more or less common results of the operation,

Sometimes the very symptoms which called for the treatment were exaggerated after its performance.

3. Should the operation prove a failure, it usually prevented the adoption of other measures, being thus truly a last resort.

4. It improved the hearing in perhaps a little over twenty-five per cent. of the cases.

5. It relieved the tinnitus in about fifty per cent. of the patients.

6. It had in about half the cases removed the vertiginous symptoms.

Having found, in a case unattended with suppuration, the ossicles to be rigid and not responding to the old treatment, we had either to pursue the massage method or that of ossicular removal; but it would be asked, how were we to decide between the two? There was no need to decide between them, the massage treatment should be instituted, and if unsuccessful, then were we to consider the question of operation. The speaker did not believe any case should be operated upon until after the patient had been at least three months under treatment. He had heard operators say that they never operated until after they had thoroughly examined and for a long time treated the patient, and yet he remembered one day in April of last year that three patients had presented themselves at his ear clinic who had been advised to have the operation performed, not one of whom had been under treatment for the ears, even as much as one visit, the opinion being given upon their first visit to an ear clinic.

During these three or more months the patient should be placed under the best hygienic influences, should be treated locally (nose, throat, and ears) as well as generally. Any part of the body needing it should receive proper attention. The ear treatment should include systematic pneumo-massage and, if deemed necessary, careful phono-massage. If, after three or more months of such persistent treatment, there was no improvement of any kind, and if we were convinced, in a case of impaired hearing, that the auditory nerve retained its functional tone, and that the functions of the middle ear were so great as to justify it, then only could we properly countenance an operation. He felt sure that the need of such an operation would rarely be felt, and that it was a very rare medical practice. Personally he had performed but twenty four such operations in five years, having treated in that time over four thousand ear infections.

The first of these he had performed in March of 1889, reporting the success as well as the broadest method. One year later, in August 1894, concerning the same case, he wrote that he had performed the operation. He had, undoubtedly, given to it the procedure that he had learned, having had no patients that perhaps later it might be necessary, but the need for it had been suggested by himself.

[illegible]

to relieve either most distressing symptoms or to endeavor to restore hearing which could not be otherwise improved. For the past few years there had been a great degree of recklessness in advising patients to have these operations performed. He remembered the case of a patient with a watch-hearing distance of as much as eighteen inches ($\frac{3}{2}$) in the ear that was to be operated on, without vertigo, but little tinnitus, being so advised. Now what were his chances of gain? Very little as compared with his chances of loss. He almost surely would have been worse had he submitted to the operation. He mentioned a typical case more fully. It proved interesting from the fact that about six months' treatment had done for the patient more than any such operation could possibly have accomplished.

The history of a case was then related by Dr. Lautenbach. In this case the tinnitus had almost entirely disappeared, there was no vertigo, and her hearing was quite fair for one of her age, much better than he had ever seen as a result of an operation on the ossicles. The ear in which the operation was to have been done, indeed, was now better than the ear supposed to be good.

Was it not better, asked Dr. Lautenbach, to use a method which was painless and which was unattended by any risk, local or general, one which was almost always successful, at least in some degree, and which left the anatomical structures so that, if necessary, we could apply other methods, and which if unsuccessful at most delayed future treatment for from three to six months only, than to subject the patient to an operation which was painful, uncertain in its effects, one which destroyed structures that could not be replaced, so that if unsuccessful, which it was in more than half the cases, the patient left all hope behind, and which sometimes intensified the very symptoms for the amelioration of which the operation had been performed? It seemed to him that there could be but one answer. In non-suppurative cases of ear disease use massage and other necessary treatment first; in case of failure, then only, the operation.

Dr. L. J. HAMMOND said that Dr. Lautenbach's experience did not accord with that of Dr. Knapp and Dr. Dench, of New York, as given at the meeting in Washington. They had seemed to think that the massage treatment did not give the same results as the treatment by the rectal probe. In the cases of these and other gentlemen had been that where there was marked retraction with great thickening, the results were not so good as those obtained by the ordinary methods with the Politzer bag and Siegle speculum. The cases that had been at all benefited were the mild ones that would have shown the same result by the routine treatment.

Dr. Lautenbach had laid great stress upon the bones as a condition of hearing. He had shown a case in which the malleus and incus had been entirely destroyed with the ossicles intact. He said that the stapes was the only bone left to do with hearing, except the stapes, and that the hearing depended largely upon the condition of the foot plate of the stapes. (See p. 10.)

tions, owing to the close proximity of the facial nerve. It, however, invariably subsided without treatment in a few weeks.

Dr. E. LARUE VANSANT said that he had had considerable experience with this massage, and in non-suppurative cases had been fairly well pleased with it. Certain cases, however, were not improved, and this might be explained by the pathological condition present. Where the adhesions were not great the case would improve. It might truly be said that they improved almost as well under the use of the catheter and Politzer bag. Where there were marked adhesions binding the drumhead down to the promontory, and probably adhesions between the ossicles, the massage treatment would not break these adhesions, and might not even stretch them. What it would do would be to puff out that part of the membrane not bound down by the adhesions. He had for some time made use of the Delstanche masseur and with it had used Siegle's speculum, and in this way he could easily see when by increased pressure certain parts of the membrane were made to bulge. Indeed, one could almost at once give a prognosis as to whether or not massage would do good.

In non-suppurative cases he thought that it was not wise to recommend removal of the drumhead and ossicles for the permanent improvement of hearing. For intense tinnitus or vertigo it might be recommended in certain cases. It was more preferable than massage for intense tinnitus with vertigo. Lately he had been treating these cases of non-suppurative otitis media with marked retraction by a combination method. He had first made an incision in the drumhead, and then, taking the little trowel-shaped knife used in removing the ossicles, he had attempted to cut through some of the bands in the middle ear, particularly toward the promontory, and had then followed this treatment by massage so as to prevent the reformation of adhesions while healing was going on. He thought that his results had been better than with either method alone.

Dr. GEORGE C. STOUT said that he thought massage and treatment of that kind should be instituted before any operation was recommended, and that this was the general practice. Operation should be reserved for a last resort, and, so far as he could learn, this was the rule with all modern aurists.

The instruments which made a noise synchronous with the massage massage, yet constituted a doubtful improvement over noiseless massage.

Dr. LAURENCE said that he was glad to learn that so many had used massage, but unfortunately most of the methods in use had been crude. He had used Siegle's speculum as a masseur for thirteen years; but this was not the method that he had referred to as a masseur. He resorted to regular massage, with a definite amount of exhaust used, a definite number of times a minute, studying the case until one found the amount of motion that was best for the case accordingly. When Dr. Knapp and Dr. Delstanche resorted to massage they could not have spoken of the method as they knew it of course. They had tried the method and found it in their offices. He understood that they both had the vibrometer and the vibrophone, but not this machine. The machine is an outside of the Siegle speculum and the Delstanche speculum had been method of phonomassage, and not massage. The phonomassage method had been used by him in the presence of his pupils, and the results had been very satisfactory. He stated that part of the reason for the success of the phonomassage was the fact that the patient was not aware of the noise, and that the patient was not aware of the noise, and that the patient was not aware of the noise. He stated that the patient was not aware of the noise, and that the patient was not aware of the noise, and that the patient was not aware of the noise.

had been affected early. In those cases where there was loss of hearing without tinnitus, phono-massage would be of no service. The main advantage to be derived from phono-massage was in the dissipation of tinnitus. It could not restore the lost hearing.

Speaking of the necessity of a sound-conducting apparatus, he thought that it was a self-evident proposition that the sound-conducting apparatus so carefully constructed, and mechanically so perfect, would not have been there if it had not been needed. He did not think that it would have received so much attention from Helmholtz if it had not had its use. He admitted that he had taken out the stirrup, and the patient could still hear; but he also knew that the patient did not hear perfectly.

He did not mean to advocate massage separate from all other treatment of the ear. He did not think that any case of ear disease was to be treated by massage alone. In his paper he had presumed that all other necessary treatment would be thoroughly carried out. One who tried to treat disease by one method without paying attention to the general as well as the local conditions present utterly failed to comprehend the science of medicine.

Speaking of severe cases, the author referred to a lady, aged thirty-four years, a school teacher, who since early childhood had been deficient in hearing. For eleven or twelve years she had been constantly under treatment and constantly getting worse. Five or six weeks ago a physician had advised her that an ossicle operation was the only thing to be done. Another physician had expressed the same opinion. Dr. Lautenbach had seen her two weeks ago, and since then she had been treated in the ordinary way and with powerful pneumo-massage to the ear. She told him that she could hear her clock at two or three inches from the ear that was to have been operated upon, a thing that she had not done for six years. In the ear the membrane was adherent to the promontory, but had been detached mechanically by the two weeks' treatment.

The massage method did separate the drumhead from the promontory, and it was only a question of time when the adhesions would be removed. The Delstanche masseur, while a good instrument in its way, was not the one that he should prefer in these cases. One could not get with it the precision of motion and persistency that was desired. One could not, if necessary, keep it up for an hour at a time. A method was wanted that would give an easily regulated persistent movement of the ossicles, one that could be used as long as desired, anywhere from five minutes to an hour or even more.

(To be concluded.)

Miscellany.

The Art of Ventriloquism.—The *Revue internationale de rhénologie, otologie et laryngologie* for August 10th publishes a review of a work on this subject by M. Flatau and M. Gutzmann. In the first part of the book, says the reviewer, the authors treat of the history of ventriloquism. It appears from cuneiform inscriptions that ventriloquism was known in Mesopotamia, and that from there it spread to Syria and Palestine. The Old Testament contains many passages which show very clearly that ventriloquism was practiced among the Jews. The most interesting and also the most important history, because of the events that followed, was that of the witch of Endor, who evoked Samuel's spirit before King Saul. She was a ventriloquist, *ἐγγαστριμύχου* in Greek, or possessor of a spirit.

This history served, during the entire middle ages, as a precedent for procedures against witches. In Greece the priestesses of Delphi and Dodona were ventriloquists.

The Greek physicians must have known of this art, but they have given no detailed account of it, although *Hippocrates* compared the voice of a woman who had throat trouble to that of a ventriloquist. Pythagoras himself seems to have possessed the art, also other men whose names and deeds have come down to the present time. On the whole, during antiquity the art of ventriloquism was made use of especially by those who imposed upon public credulity.

Very little is known of the history of ventriloquism during the middle ages, and it was not of much importance until the year 1600. From that time the data are more numerous, and may be divided into two groups: The first embraces those which relate to the histories of certain ventriloquists and the abuses they practiced; the second contains essays on the physiological explanations of this phenomenon. In the first group the name of the anatomist Casserius appears, who did not hesitate to say that "the second voice of the ventriloquist—if it existed at all—should be, not natural, but magical and diabolical." Among others in the second group are found names celebrated in medical history: Van Helmont, Diglax, Pierre de Castro, l'Abbé Nollet, Haller, and Schaarschmidt, who considered that ventriloquism was produced during inspiration.

It was not until the end of the year 1772 that the experimental method was established. At that time a work appeared on *Ventrioloquium, or Engastrimythus*, by the Abbé de la Chapelle, who had been able to persuade the *Académie des sciences* of Paris to examine a ventrioloquist named Saint-Gilles. This examination had proved "that the stomach played no part in the production of ventrioloquism, and that it was caused solely by a certain constriction of the throat which was acquired by habit." Richerand also, in his *Traité sur Physiologie*, attributed this phenomenon to a lowered epiglottis and to a small quantity of air escaping through the glottis. Lespagnol thought he saw the explanation in a very accentuated elevation of the velum of the palate. Geoffroy de Saint-Hilaire thought that the engastrimythusmus was produced by the aid of a second rudimentary larynx, corresponding to that of birds. Magendie considered it entirely to be a mere function of facial muscles. Jans Møller himself learned the art and thought that it was produced by slow expiration, and in closing the glottis. Liskorin, in 1840, attributed ventrioloquism to inspiration.

In the second part of this work the authors give their experiences resulting from the examination of six ventriloquist. Ventriloquists, they think, consist in modifying the voice in such a manner as to deceive those who listen. The examination of the ventriloquist's phonic sounds proves that the vibration of the larynx is very feeble and even imperceptible. The upward motion, that the larynx takes during normal intonation is not constant in the ventriloquist; he may even lower it, but he never raises it *intentionally*. The position of the pillars of the palate is much greater than when the tongue is in its normal position, and the pillars form a very sharp angle. The uvula has no part in this. The contraction of the palate is difficult and impossible in certain aspects. This relates to the supraglottic, which is formed back and forward of the glottis from the laryngeal tube. N. S. Saito, H. M. Flanagan and M. G. Oprescu agree that to explain the illusion that the tongue is in the glottis, a portion of the glottis appears to be closed in contact by touch on the other. The tongue appears to be in contact with the larynx in this condition when the speaker and the listener hear each other in contact. The contact is not real. The contact then is not contact. It is not the glottal and the supraglottal in contact normal. When the ventriloquist speaks he does not use

much smaller quantity of air than in ordinary speaking. The epigastrium and the diaphragm remain in the position of inspiration, and the muscles of the abdomen are stretched and contracted. This position may be produced by yawning or by pressing in a physiological effort. It may be the result, also, of different affections.

The psychological phenomena of the listener are based on the fact that we are accustomed to hear always the same voice from the same person, and to estimate the distance according to the intensity of the sound which strikes the ear. These two elements are changed and give rise to two false conclusions: The illusion that the ventriloquist's voice comes from a different direction is produced by variations of tone and of the resonant accessory cavities. Then, the expression of the ventriloquist's face—sometimes astonished or frightened, looking toward the place from where the voice appears to come, etc.—all this helps to complete the illusion.

The Mississippi Valley Medical Association will hold its twenty-eighth annual meeting at Hot Springs, Ark., on November 20th, 21st, 22d, and 23d. The preliminary programme includes the following papers: Cases of Traumatic Cataract in Children Treated by Extraction, by Dr. James M. Ball, of St. Louis; Toxics, by Dr. W. F. Barelay, of Pittsburgh; The Philosophy of Stimulants, by Dr. A. D. Barr, of Calamine, Ark.; Squint, with Special Reference to an Operation, by Dr. Charles I. Beard, of St. Louis; Conservative Surgery, and what it means at the Present Time, by Dr. A. C. Bernays, of St. Louis; The Deeper Inflammations of the Skin, by Dr. A. W. Brayton, of Indianapolis; Intestinal Indigestion, by Dr. A. P. Buchman, of Fort Wayne, Ind.; The Medical Expert Witness, by Robert M. Campbell, Esq., of Ashland, Ohio; Some Observations on Sore Throat due to Concretions in the Tonsils, by Dr. L. C. Cline, of Indianapolis; The Differential Diagnosis of Coma, by Dr. W. J. Conklin, of Dayton, Ohio; Constipation, by Dr. George J. Cook, of Indianapolis; Syphilis, and its Relation to Other Affections, especially those of the Skin, by Dr. William T. Corlett, of Cleveland; Surgical Treatment of Uterine Fibroids; Disposal of the Pedicle, by Dr. A. H. Cordier, of Kansas City, Mo.; Stab Wound of Pericardium; Resection of Rib; Suture of Pericardium; Recovery, by Dr. H. C. Dalton, of St. Louis; Surgical Treatment of Tracheoma, by Dr. Davis A. Dean, of Pittsburgh; Possibilities of Medicine, by Dr. J. O. DeCourey, of St. Libory, Ill.; Some New Instruments and Means of Physical Diagnosis, by Dr. Charles A. Denison, of Denver, Col.; Dr. Archibald Dixon, of Henderson, Ky., will read a paper (subject not announced); Quercus in Chorea, by Dr. Frank R. Fox, of St. Louis; A Few Remarks on the Early Military History of the West, by Dr. S. C. Galloway, of Kansas City, Mo.; A Case of Trephining for Cerebral Clot, with Loss of Vision; Recovery, by Dr. John B. Hamilton, of Chicago; Spot Specialist, by Dr. C. H. Hughes, of St. Louis; The Management and Treatment of Endometritis, and the Prevention of Tubal and Ovarian Diseases, by Dr. W. H. Humiston, of Cleveland; Functional Stomachitis, by Dr. E. C. Hunt, of Missouri; On the Pathogenesis, Prevalence, and Constitutional Connections of Acromegaly, Dyspepsia, and Hyperostosis, with a Study of the Human Skull as a Diagnostic Aid, by Thomas H. Johnson, of St. Louis; W. S. Kelley, of Memphis, Ohio; and Dr. W. S. Kelley, of Cincinnati, Ohio, will each deliver a paper on "The Nodular Metastases of Cancer," by Dr. Howard Crosby, of St. Louis; Cases of Epilepsy, by Dr. J. C. Link, of Terre Haute, Ind.; Dr. Nelson Adams, of Chicago; Dr. H. S. Jones, of St. Paul, Minnesota; Malaria, by Dr. S. Jones, of St. Louis; Pharyngeal Papilloma, by Dr. S. Jones, of St. Louis; Pharyngeal Papilloma, by Dr. S. Jones, of St. Louis.

great importance. It is among the earliest symptoms, and is probably the most constant. It is elicited by direct pressure on the spine of the affected vertebra and also by pressing the spine from side to side. When the disease is situated in the most mobile portions of the spine, as in the cervical region, movements are the most painful. When it is situated in the latter region movements of the head are greatly restricted and painful. The patient instinctively fixes the head in an abnormal position. Sometimes it may incline to one side so persistently as to simulate torticollis, but the sternocleidomastoid muscle is tense on the side toward which the head is inclined, just the opposite of what we find in the latter disease. With the pain and tenderness, rigidity of the muscles that fix the affected portion of the spine is usually found, especially during the examination. Thickening of the spines with induration of the soft tissues adjacent to them is sometimes found, especially in the cervical region. I have seen a few cases with considerable thickening of the spines in the dorso lumbar region following injuries to this region. Caries of the spine should be detected before deformity is apparent if the patient has sought advice for the early symptoms. In only a few cases is the deformity one of the earliest symptoms. Marked deformity is often absent when the morbid process occurs in the cervical region until considerable progress has been made in the disease. In the dorsal and lumbar regions slight lateral or backward displacement of a spine may often be detected as soon as the body of one of the vertebrae begins to break down. It is unnecessary for me to call your attention to the formation of abscess, which sometimes occurs as a result of spinal caries, further than to remind you that when you find evidences of accumulation of pus in the groin or in parts adjacent to the spinal column you should carefully examine for bone disease.

Nerve-root Symptoms.—The spinal nerves are most frequently damaged when the bone disease is situated in the cervical region. Nerve-root symptoms may be divided into four classes: sensory, motor, reflex, and trophic. The earliest of these, as a rule, are the sensory, but even these are not often sufficiently early for diagnosing the disease in its incipency, except when external pachymeningitis is associated with caries. In a number of cases radiating pains along the course of the nerves are quite prominent. When the disease is high up in the cervical region, the pain extends over the posterior portion of the head; when in the cervico-dorsal, the arms suffer; and when in the lumbo sacral, especially if the disease is unilateral, the pain is felt along the course of one sciatic nerve, and is not infrequently mistaken for sciatica. When the pains are first felt, the skin over the area to which the affected nerve is distributed is hyperæsthetic, but later irregular areas of partial or complete anesthesia are present. This may alter from time to time, and the patient may be the friend and enemy of the disease. In some of the cervical patients very peculiar sensations may occur in the arms or hands, such as cold, numbness, tingling, or such as early atrophy, from irritation of the nerve roots, and it is usually a very pronounced one from this cause. If the disease is low found, a pain

tion of some importance early in the disease, when it occurs from voluntary or involuntary efforts of the patient to fix the spine in order to lessen the pain caused by movements of the spinal column.

The reflexes are usually abolished over the area supplied by the affected nerves, and often, increased reflexes are an early symptom of spinal caries. The mechanism by which the reflexes are increased under such circumstances is not easily explained. It is not entirely, if in part, due to irritation of the nerve roots.

Trophic disturbances are seen only in comparatively late stages of the disease, but more commonly they occur later. When the lower cervical nerve roots are irritated, some derangement of the sympathetic nervous system may take place, resulting in irregularities of the pupils and vascular disturbances, with sweating, etc. At times muscular wasting of the arms and hands is prominent in caries, and occasionally it is seen in one or both legs in affections of the lumbar and sacral bones. Herpes zoster, occurring along the course of the irritated spinal nerves, is a very infrequent affection from bone disease.

Symptoms of impaired functions of the cord are very frequent as a result of caries of the vertebrae. In the majority of instances they occur after the bone disease has made considerable progress, and are then due to compression of the cord and the resulting myelitis. Occasionally, however, the cord is involved before bone disease is suspected, and, under such circumstances, the spinal marrow probably suffers from inflammation rather than compression, except in cases where the dura has become sufficiently thickened to exert pressure on the cord. As I propose, in connection with the case which we are now considering, to devote some time to the consideration of compression of the cord and the resulting inflammation and degeneration, I shall postpone what I have to say further concerning the cord symptoms of caries until the next lecture.

The diagnosis of caries of the spine in the majority of instances is not difficult, if the chief symptoms are borne in mind and repeated careful examinations are made. Pain in a limited region of the spinal column, increased by extreme lateral, forward, and backward flexions of the spine; rigidity of the spine; tenderness of the spine at the seat of the disease; the presence of a swelling of the spine; the history of an injury to the spine, or of tuberculosis in the family; nerve-root pains, with excess of cutaneous reflex action of the soles of the feet early in the disease; areas of hyperæsthesia, anesthesia, muscular rigidity or wasting; the youth of the subject, in a majority of instances, and the associated symptoms of pachymeningitis, are all factors which should bear a weight in a careful examination. When evidence of bone disease is present, and symptoms of compression of the cord are present, the diagnosis is usually made. When evidence of pachymeningitis is present, the former may be overlooked, and the latter may be mistaken for the former. When the disease is in the cervical region, the history of an injury to the spine, or of tuberculosis in the family, may be of great assistance. When the disease is in the lumbar or sacral region, the history of an injury to the spine, or of tuberculosis in the family, may be of great assistance. When the disease is in the lumbar or sacral region, the history of an injury to the spine, or of tuberculosis in the family, may be of great assistance.

by carefully examining for the early symptoms of bone disease, such as pain, tenderness, and slight irregularity of the spines. It is exceedingly rare for all these symptoms to be absent, but they may be slight and unobtrusive, and must be carefully searched for. Primary pachymeningitis gives rise to nerve-root and cord symptoms similar to those following caries. The absence of evidence of bone symptoms would be in favor of the former. Pachymeningitis in childhood, or young adults, or in tuberculous subjects, is much more likely to be secondary to bone disease than to be primary. The absence of other causes of pachymeningitis, such as syphilis, alcoholism, and repeated exposures to cold, is in favor of caries. When caries occurs in the cervical region, there may be little or no deformity, and the muscular wasting in the arms may simulate progressive muscular atrophy, but the irregular distribution of the muscular atrophy, the severe pains along the course of the spinal nerves, and the presence of areas of anæsthesia would be sufficient to distinguish this from the progressive muscular atrophy in which the only sensory symptoms are vague rheumatoid pains in the affected muscles. The disease may be mistaken for a primary transverse myelitis when the cord symptoms are early and prominent. Under such circumstances, the presence of the symptoms of the incipient stage of bone disease should be sufficient to put one on his guard. I have met with a number of cases of caries of the spine in which the diagnosis of spinal irritation had been made by physicians of no mean ability. In the latter trouble there are usually two or more points of spinal tenderness, or the parts over the entire spinal column may be sensitive to pressure, and deep pressure does not increase pain over that produced by slight pressure, and in some cases it causes less pain. The absence of irregularity of the spine and areas of anæsthesia is in favor of spinal irritation in doubtful cases, especially in nervous and anæmic females. A diagnosis of hysterical paraplegia with spinal tenderness has been made in young women suffering from caries of the spine resulting in myelitis. The presence of distinct evidence of bone disease and of organic lesion of the cord, which will be found if carefully searched for, will prevent such a mistake. The danger of confounding hysteria when paraplegia is present with caries of the spine is much less than the opposite error, and will not occur if care is used in the examination.

When both the sciatic nerves are the seats of pain in caries of the lumbar or sacral vertebra, the danger of mistaking the disease for sciatica is not great if it is borne in mind that double sciatica is exceedingly rare, and that a case will more than likely arouse suspicion of the pain being symptomatic of other and usually graver trouble than inflammation of the sciatic nerves. When, however, only one sciatic nerve is involved, it is not dangerous to assume, as a first step in diagnosis, sciatica, but it may, as I said, be prevented if it is remembered that in sciatica the pain comes from the lower extremity, the pain is usually worse at the end of the day, and that the patient is usually relieved by rest. In the case of caries of the spine, the pain is usually worse in the morning, and the patient is usually relieved by rest. In the case of caries of the spine, the pain is usually worse in the morning, and the patient is usually relieved by rest. In the case of caries of the spine, the pain is usually worse in the morning, and the patient is usually relieved by rest.

affected nerves. After we have satisfied ourselves of the presence of bone disease we must go further, and determine whether it is due to caries, tumor, or an eroding aneurysm. Gowers states: "In the first half of life the presence of bone disease is practically tantamount to the recognition of caries." In the second half of life evidence of disease of the spinal vertebrae should lead us to examine carefully for the symptoms of aneurysm or tumor. The presence of a tumor in another portion of the body, or the history of the removal of a tumor from a person suffering from disease of the vertebrae, should lead us to suspect tumor. The symptoms of bone disease due to aneurysm or tumor are more likely to be unilateral in their early stage than those from caries, and the pain produced by aneurysm or tumor involving the bones of the spinal column, especially on movement, is usually intense to a degree out of all proportion to the pain of caries. I will leave the consideration of the prospects of recovery and the management of caries for the next lecture, when we shall study compression of the cord, especially from disease of the bones.

Original Communications.

A CASE OF COMPOUND FOLLICULAR ODONTOMA

INVADING THE RIGHT ANTRUM OF HIGHMORE
AND OBSTRUCTING THE CORRESPONDING NASAL FOSSA.

With an Apparatus for Administering Anæsthetics,
especially adapted to Operations in the Mouth, Nose, and Throat.*

BY A. W. DE ROALDES, M.D.,

NEW ORLEANS.

ODONTOMATA are still more or less rare, especially those of the variety to which belongs the specimen which I am to submit to you to-day; every case, therefore, deserves to be made public. Our own American literature is, so far as my reading extends, very barren on the subject. French and English authors, particularly during the last twenty-five years, have illustrated the subject with interesting series of cases (Forget, Robin, Broca, Magitot, Panas, etc.; Tomes, Heath, Lloyd, Sutton, etc.). These considerations have induced me to lay before you the following case, which, after starting in the border line of general and oral surgery, certainly passed into our domain when the growth invaded the antrum and obstructed the nostril. You will therefore excuse me if, owing to its great interest, I introduce before you this subject, germane to our special studies:

Daniel A. died nine years ago, of Natchez, Miss., was brought to my office in the first days of February, 1891. His previous history, as ascertained antecedently through the kindness of Dr. George W. Remondet of Natchez, is, in the doctor's own words, as follows:

Present History.—It was in July, 1892, in the office of Dr. N. E. Green, professor of ophthalmology, that I first saw the little

* Read before the American Laryngological Association at its sixteenth annual session.

jaw, the denticles numbering in all three hundred. After careful researches on the subject I do not know of any case that can be compared, as to the number of denticles, to the one I to-day bring before you.

The case of Sims contained forty, the one of Tellander twenty-eight, and the one of Mathia's fifteen (all figured in Sutton's work).

Henry L. Albert and Hildebrand are quoted by Sutton as having reported a similar case, but referring to the original observations, I find no mention made of the number of denticles. Strange to say, the growth in almost every one of these five cases was located in the upper right maxilla. I know that Sutton, who was rather arbitrary several years ago in his assertions of the extreme rarity of the odontoma of the

inclined to believe had not erupted. If this view is taken, the location of this odontoma in the incisor region would be a real curiosity, as Professor von Metnitz, of Vienna, in describing a case of that kind, *believes it to be unique* (see abstract of case in the *British Journal of Dental Science*, 1891, vol. xxxiv, page 211).

It is more difficult to explain why, as has been observed, these tumors should more generally affect the right upper and lower jaws. As to the growth which came under my observation for operation, it was undoubtedly connected with the canine tooth which had not erupted. Even that connection is very unusual, as Broca can only cite one case of odontoma developed in the canine region. As a rule, the points of selection for these growths are the pre-molar and molar teeth, and in these last more particularly.

It is to be supposed that the two growths were independent and represented two distinct odontomata. Cases of double odontomata on the same subject are on record, but the growths do not generally develop on the same side of the maxilla. In regard to the diagnosis, "it is a curious fact," says Sutton, "that up to this date there is no instance on record in which an odontoma, other than a follicular one (dentigerous cyst), has been diagnosed before operation." This assertion is too sweeping, as can be proved by the case of Panas and two or three others. It shows, however, how difficult is a positive diagnosis, especially when the growth remains imbedded in the thickness of the maxillary bones.

The factor which must outweigh all other considerations in the mind of the surgeon is the one relating to the age at which the tumor makes its first appearance: it is pretty safe to assert that any neoplasm which presents itself in the maxillary bones after the completion of dental evolution is not an odontoma. This consideration, coupled with the young age of the patient and the absence of one or more teeth, will assist materially in overcoming our doubts. It is most important, however, to arrive at a precise diagnosis, as the study relating to the literature of odontoma is very instructive, inasmuch as it shows that patients have in many instances been subjected to operations needlessly severe and dangerous.

Before proceeding to excise a portion of the mandible or maxilla, the surgeon must satisfy himself that the tumor is not an odontoma, for this kind of growth generally regrows only rarely after its removal.

Although the result has been as satisfactory as could be in my case, I can think that a more conservative procedure, through the use of a knife instead of a saw, had been adopted with equally good results.

In conclusion I wish to say that at the request of my friend, Professor Edmund Sweeney, of New Orleans, the case appearing which he has entitled *Infantile maxillary tumor* (the second case of an infantile maxillary tumor) was determined by the ordinary method, and from the moment the operation began, the anesthesia was kept up with the chloroform until, according to his own statement, the thorough destruction of nerve and all of present. The procedure was perfect, during the entire



FIG. 2. Photographs of the fragments of bone and denticle removed from the upper right maxilla of a patient. A small fragment of the denticle marked X is shown magnified in Fig. 1.

superior maxilla, as compared with those which develop in the lower jaw, has now modified his views, as more research is published and a more thorough macroscopical examination is made. The fact is that, evidently before Broca's very remarkable memoir, called the attention of surgeons to this subject, a great many cases described as fibrous tumors and cysts of the jaw were nothing else but odontomata. Such cases are now very well defined by osteofibrous, epidermo-vascular, and chondro-epithelial (odontoma) and of these tissues (enamel, dentin, and cementum) in varying proportions and differing degrees of development, arising from tooth germs or tooth buds in the groove of growth. In fact, real odontomata. While unable to substantiate the statement on histological grounds, it is to be presumed that in this case that was described by Dr. Roberts as a fibrous growth and removed by him without any regrowth, that there was a serious infection in connection with the right central incisor, which was supposed to have been lost by premature dissolution of its fang, but which I am now

operation, and I did not have to stop a minute until it was completed. At one time, owing to accumulation of blood in the throat, due to the fact that the artery had been severed closely to its exit from the infraorbital canal and could not be seized with the forceps, the head of the pa-



FIG. 3.

tient was lowered and kept in Rose's position quite a while without any interference whatever of the anesthetist with the operator. Barely three quarters of an ounce of chloroform was used. Professor Souchon, who was kind enough to himself administer the anæsthetic, informs me that he has tried his apparatus with equal satisfaction in several operations at the Charity Hospital.

Literary and Clinical References.

DuRoi. Case of Odontoma, communicated to the Faculty of Medicine of Paris in 1809.

Dupuytren. Kyste à parois osseuse et contenant une tumeur

Gaz. des hôp., tome ii, 1829-30, p. 144.

Owen, H. *[Phys. of Odont. appt.]*, 1849, 46, plate 27.

Parrot, A. Notes sur les tumeurs dentaires, leurs variétés, leur traitement, et leur traitement. Nouvelle observation d'odontome. *Ann. med.*, Paris, 1808, pp. 629-635.

Parrot, A. Histoire d'un odontome d'une tumeur, etc. *Bull. de la Soc. de Med.*, Paris, 1841.

Parrot, C. Case of Odontoma, recorded by Sir John Erichson. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. Case of Odontoma, reported to the Odontological Soc. of Great Britain, December, 1862.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Mon. de la Soc. de Med.*, Paris, 1863.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Parrot, C. On the compound follicular odontoma, in the lower jaw, of a female. *Trans. of the Odontological Soc. of Great Britain*, vol. iii, 1861-'62, p. 365.

Broca, C. Recherches sur un nouveau groupe de tumeurs désignées sous le nom d'odontomes. *Bull. de l'Acad. des sci.*, Paris, 1867.

Letenneur, C. Odontome radulaire cémentaire. *Gaz. des hôp.*, Paris, 1868, p. 158.

Weinlechner, C. Case of Odontoma. *Wochenblatt der Gesellschaft der Wiener Aerzte*, 1869, No. 29.

Broca, C. Odontomes. *Traité des tumeurs*. Paris, 1869, tome ii, p. 265.

Heider and Wedl. *Atlas zur Pathologie der Zähne*. Leipsic, 1869, plate iii, Figs. 34-39.

Magitot. Odontome développé sur la défense d'un éléphant, pièce présentée à la Société de chirurgie. *Gaz. méd. de Paris*, 1869, p. 176.

Guyon et Monod. Art. Odontomes. *Dict. encyclopédique des sciences méd.*, 2me série, vol. v, p. 444.

Tomes, Charles. Case of Mr. Hare Re-examined and Redescribed, and Considered To-day as a Genuine Odontoma. *Trans. of the Odontological Soc. of Great Britain*, 1872.

Annandale. Case of Odontoma. *Edinb. Med. Jour.*, January, 1873.

Scheff, J. Ueber Odontombildung. *Wiener med. Presse*, vol. xiv, 1876, pp. 890-919.

Panas. Odontome odontoplastique fibreux, avec grains dentinaires éparpillés, etc. *Bull. et mémoires de la Soc. de chir. de Paris*, pp. 347-356.

Salter, S. J. A. Two Odontomas, associated with Cysts. *Guy's Hosp. Reports*, London, vol. xxi, 1876, pp. 220-226.

Magitot. *Traité des anomalies du système dentaire*. Paris, 1877, p. 232.

Moon. Case of Odontoma. *Trans. of the Odontological Soc. of Great Britain*, vol. x, 1877-'78, p. 30.

Fothergill, Edward. Case of Odontoma, exhibited to the Odontological Society, by Mr. Coleman. *Trans. of the Odontological Soc. of Great Britain*, 1879-'80, p. 2.

Uskoff. Ueber ein grosses Odontome der Unterkiefer. *Virchow's Arch.*, Bd. lxxv, 1881, p. 537.

Heath, Christopher. A Case of Odontoplastic Odontoma. *Trans. of the Clinical Soc. of London*, vol. xv; *Dental Record*, vol. i, 1881, p. 199; also in *Lancet*.

Praeger, Alfred J. A Case of Odontoplastic Odontoma. *Dental Record*, vol. i, 1881, p. 198.

Underwood, A. S. A Remarkable Odontoma. *Jour. of the Brit. Dental Assoc.*, vol. iii, 1882, p. 103.

Fergusson, Sir William. Case of Odontoma. See Tomes's *Dental Surgery or Heath's Injuries and Diseases of the Jaws*, 1884, p. 217.

Heath, Christopher. Odontoma. *Brit. Med. Jour.*, 1887, vol. i, p. 155.

Laplanche. Notes sur un cas d'odontome embryoplastique, etc. *Gaz. hebdomadaire*, 1885, p. 241.

Sutton, J. B. Comparative Dental Pathology. *Trans. of the Odontological Soc.*, 1884-'85, p. 42.

Sutton, J. B. On a Remarkable Case of Odontoma in a Thar. *Jour. of the Brit. Dental Assoc.*, vol. xxxi, 1888, pp. 301-303.

Sutton, J. B. On the Relation of Rickets to some Form of Odontoma. *Trans. of the Odont. Soc.*, 1888-'89, p. 138.

Sutton, J. B. Paper on the Classification of Odontomas. *Jour. of the Brit. Dental Assoc.*, vol. iii, 1882, p. 103.

Arkovy, J. Notes on an Odontoma, with Histological Drawing. *Jour. of the Brit. Dental Assoc.*, vol. viii, 1887, pp. 3-43.

Sherrin. Case of Odontoma reported by Prof. Windle and Mr. Humphreys. *Jour. of Anat. and Physiol.*, vol. xxi, 1887.

David Jordan. Compound Odontoma of the Upper Jaw. Removal. *Lancet*, 1888, vol. i, p. 64.

Goodwillie. Case of Odontoma, mentioned in *Agnew's Surgery*, vol. ii.

Logan, A. H. Case of Cystic Tumor, Extirpated from the Facial Sinus of a Horse. *Jour. of Comparative Med. and Surg.*, New York, 1887.

Albert, Henry L. Successive Eruption of Supernumerary Teeth from a Bony Tumor of the Upper Jaw. *Illustrated Med. Jour.*, August 10, 1889, p. 125.

Von Metznitz. Case of Odontoma. Abstract in *Brit. Jour. of Dental Sci.*, 1891, p. 21.

Heidenrich, A. Odontomes. Duplay. *Traité de chirurgie*, Paris, 1891, vol. v, p. 137.

Dunkerly, J. W. Odontomas. *Brit. Jour. of Dental Sci.*, vol. xxxv, pp. 1-11.

Sutton, J. B. *Tumors, Innocent and Malignant*. Philadelphia, 1894.

No. 624 GRAVIER STREET

A CASE OF NEUROTROPHIC LESION OF THE TONSIL, VELUM PALATI, AND PALULA, COMPLICATING MULTIPLE NEURITIS.

By BENJAMIN F. WESTBROOK, M. D.

BROOKLYN.

THE diagnosis of this case was based on the mode of origin of the ulcerative process, the progression of the symptoms, the phenomena associated with its healing, and the fact of its occurrence during the course of an extensive neuritis which involved most of the peripheral nerves on the corresponding side of the body.

I have not seen any report of a similar instance of this necrotic change of the tissues of the tonsil and palate as a dystrophy of neuritic origin, though it is probably not unique, for there have been cases of ulcerative hemiglossitis from trigeminal disease reported, as well as numerous observations of tympanic and drum inflammations, suppurations, and ulcerations resulting from pathological states of the pneumogastric, or of the Cuscutum and otic ganglia and their anastomosing fibers. The location of the lesions in this instance would suggest the implication of the sphenopalatine ganglion, either by inflammation of the perineural tissues of the ganglion itself, or by way of reflexes participated in by the nerve fibers connecting it with the facial, palatine, nasal, and aural structures.

The pathological physiology of these trophic lesions is not perfectly understood, but, so far as I can understand it, not being started in the language of the neurotrophic it seems to be the present impression, subject to modification by future research, that the inflammatory and hypertrophic lesions are more intimately connected with derangements in the sensory, and ulcerative, necrotic, and gangrenous changes, with the motor nerves. The complex anatomy of the nervous system, and the impossibility of ascertaining the relations of its intermediate filices and nodes by dissection, make it impossible to rely largely on the observation of the natural experiments prepared for us by errors in development, by the results of inflammation, and degenerative processes, and by traumas.

The patient in this case was a man, fifty-one years old, a scientist and inventor. He had been engaged for several years with extensive experiments in the preparation of steel implements of war to meet the requirements of modern ordnance, laboring long and arduously with both mind and body.

About a year before I saw him, which was in March last, he became exhausted from excessive toil, and also, probably, from anxiety for the success of his inventions, which were of international importance. The breakdown was accompanied by an attack of what was at first supposed to be articular rheumatism, but which was subsequently diagnosed by my friend Professor Landon Carter Gray as a diffuse neuritis.

There were severe neuralgic pains, numbness, and incomplete paresis of the left upper extremity; less pronounced but similar affections of the lower limb, œdema, tapering fingers, and glossy skin. He suffered also from the most intense neuralgia of the left side of the face, including the ear, nose, and tongue. The hyperæsthesia was such that the most delicate touch gave him agonizing pain. There had, besides, been an eruption, either eczematous, as he said, or herpetic more probably, in the left temporal and malar regions.

About three weeks before I first saw him he began to have difficulty in swallowing, and on looking at the throat he found that there was a commencing ulceration of the left tonsil. The pain and dysphagia increased from day to day, and when he came to Brooklyn at the end of two weeks to consult his brother, who is a physician, it had become impossible to swallow anything but liquids, and even this caused the most intense pain.

When the doctor inspected the throat he was astonished and alarmed by the extent and character of the ulcer, which, in the short space of two weeks, had denuded the entire buccal surface of the left tonsil and extended to the outer two thirds of the anterior pillar of the fauces, which it threatened to destroy, thence invading the surface of the palate almost as far as the base of the uvula.

The surface was very irregular, particularly the tonsillar portion of it, which looked as if composed of large granulations with very deep depressions, or lacunæ, between them. In fact, the latter probably represented the natural lacunæ or crypts of the tonsil excavated on all sides, but with their depth diminished by the destruction of the tissues which had surrounded their mouths.

All the structures involved were considerably swollen, and of rather a dusky hue, but not indurated. The hyperæsthesia was so great that the slightest touch was sufficient to excite the posterior pillar or of the palato-pharyngeal region.

The pharyngeal apparatus was so sensitive that the hypersensitiveness of its surface led the doctor to cauterize it with pure creosote.

The slough separated piecemeal in four or five days, leaving a surface less ragged than before, and with less of the grayish-yellow, pulpy look which had characterized it at first. The rapidity of its extension had also been somewhat less, perhaps, than would have been the case had the patient been treated by the ordinary methods.

Its size was, however, still increasing, and the pains connected with it were not abated.

At the same time the patient was suffering from a severe neuritis of the left side of the face, including the ear, nose, and tongue, which was accompanied by a severe neuralgia of the same side of the face, including the ear, nose, and tongue, which was accompanied by a severe neuralgia of the same side of the face, including the ear, nose, and tongue.

*As given to me by the patient, and as it appeared in the original manuscript, it was as follows: "The patient was a man, fifty-one years old, a scientist and inventor. He had been engaged for several years with extensive experiments in the preparation of steel implements of war to meet the requirements of modern ordnance, laboring long and arduously with both mind and body."

centimetre above (or anterior to) the base of the uvula. At the junction of the left border of the uvula with the free border of the velum it had made a notch that suggested an impending amputation.

I was also able to ascertain that the outer half of the posterior aspect of the velum and posterior pillar was included in the ulcerative process, which had reached downward as far as the pharyngo-epiglottic fold.

The color of the mucous membrane was deeper than in ordinary inflammations, approaching crimson rather than scarlet, and indicative of venous stasis. This appearance extended to the hard palate, as far forward as the first molar, and blended very gradually with the somewhat lighter tint of the opposite side. The left tonsil was enlarged sufficiently to come in contact with the whole length of the uvula, which was slightly oedematous.

It was impossible, owing to the unbearable pain caused by only a little pressure, either on the diseased tissues or the base of the tongue, to get a view of the interior of the larynx; but the superior rim, formed by the epiglottis, the aryteno-epiglottic folds, and the eminences of the cornicula, was not encroached upon.

The submaxillary glands of the left side were enlarged. On the right side there was slight glandular swelling, but not more than would result from the functional derangement of the corresponding lymphatic districts in the mouth and throat.

Of the constitutional conditions it is only necessary to say that the afternoon temperature was 100° F., the pulse rapid (110), and the aspect of the patient expressive of the exhaustion consequent on long suffering and loss of rest.

The urine was hyperacid, and, a condition to which much clinical weight should be given, *it was acid throughout the twenty-four hours.*

The bowels were inclined to be constipated, but had been regulated by the judicious use of laxatives.

The diagnosis was from carcinoma, lupus, and syphilis. The rapidity of its progress excluded the first two, which were also rendered doubtful by the entire lack of induration of the base and margins of the ulcer. Besides, the associated lymphatic glands would have been much larger, in the case of such a rapidly growing and ulcerating cancer of the tonsil, than they were, in this instance; if, indeed, we were justified in supposing that such an extraordinarily rapid growth could occur.

The lesion which was at once suggested on looking at it was *syphilitic pharyngitis.*

So rapid was the destruction of the tissues implicated that the doctor, when he first saw it, only two weeks after the beginning, found parts of the surface, particularly at the edges, *gangrenous.*

There was, however, no history of either the primary lesion or any of the secondary phenomena of syphilis; and there were no signs of the disease elsewhere. It was evident that there had been an extensive neuritis which had not yet entirely subsided, and that some of its most decided symptoms had been within the area of destruction. The facts, however, taken together with our knowledge of the trophic lesions so frequently resulting from this disease *pointed to the diagnosis of a trophic lesion of the tonsil.*

Besides the symptoms given as relating especially to the disease of the tonsil and pharynx, there were five others, which, taken probably independently, presented with the disease described, but a more common to the disease of the tonsil. The first was a general weakness, which was not only evident in the patient's aspect, but in the fact that he could not stand without being supported. The second was a general loss of appetite, which was not only evident in the patient's aspect, but in the fact that he could not eat. The third was a general loss of sleep, which was not only evident in the patient's aspect, but in the fact that he could not sleep. The fourth was a general loss of weight, which was not only evident in the patient's aspect, but in the fact that he could not gain weight. The fifth was a general loss of vitality, which was not only evident in the patient's aspect, but in the fact that he could not live.

ence in the sizes of the pupils, the left being smaller and not responding so readily to the impact of light. 2. A relaxed condition of the small blood-vessels, with a slight, dull reddening of the skin, slight oedema, and occasional transient flushing. Along with this vaso-motor disturbance there was some lachrymation. 3. Congestion of the drum membrane and paroxysms of the most intense pain in the auricular region, extending to the throat. 4. Throbbing of the carotids. 5. The gums were swollen and soft, with dark-red borders, and a tendency to loosening of the teeth.

The treatment was begun by putting a very small pledget of absorbent cotton, saturated with an eight-per-cent. solution of cocaine hydrochloride, into the left nostril, so that the fluid might pass backward to the orifice of the Eustachian tube, the posterior surface of the palate, and the tonsil, the last being rendered feasible by the projection of the swollen gland, so that it would catch any liquid coming from that direction.

This enabled me to depress the base of the tongue obliquely toward the other side, and to thoroughly cleanse the surfaces with Seiler's solution of half the ordinary strength.

He was then caused to hold the mouth piece of an Evans's inhaler well back in the mouth, letting the finely nebulized spray of a twenty-per-cent. solution of carbolic acid pass through the nose quietly, as it must with gentle breathing, the mouth being closed. This was continued for half an hour.

Constitutionally, he was treated on the antirheumatic plan. The first step was to furnish him with an alkali and some litmus paper, with directions to test the reaction of the urine at every act of urination, in order that we might regulate the dosage of the alkali in accordance with the color of the paper.

He was also put on a mixture of the iodide of potassium and the bichloride of mercury.

He was allowed to continue to spray his throat (though only once or twice a day) with a solution of hydrogen peroxide which he had been using, but soon found, as I had feared, that it was productive of too much pain, although it acted well otherwise. At bedtime he took a powder of morphine and phenacetine.

It was not possible to get the urine thoroughly alkaline, as the combination of the bicarbonates of sodium and potassium which was prescribed produced nausea if given in sufficiently large doses; but the acidity was brought below what would be normal with a healthy man. Subsequently he was put on a mixture of colchicum and the salicylate of sodium, with enough of the bicarbonate of sodium to neutralize the slight acidity of the salicylate. As the slow improvement in the general neuritis was considerably accelerated while he was taking this mixture, I concluded that the constitutional condition of rheumatism, or rather of rheumatic gout, was, as I had supposed it to be, a cause of his disease. After a few days the local treatment was changed.

The region affected was first partly anaesthetized with cocaine, which was in the strong solution (eight per cent.), introduced into the left nostril, and then in a very weak solution (one to two per cent.) sprayed into the throat, the object being to reduce the sensitiveness so that he could bear further treatment, but to avoid anything like complete anaesthesia, which might, I feared, be followed by a subsequent relaxation of the blood-vessels and a greater tendency to necrosis. The parts were then washed by spraying against them a diluted Seiler's solution, sometimes with a little tannin added to it to coagulate the pus and favor its removal. The spray was thrown against the surface by a pressure of from fifteen to twenty pounds to the square inch, which was as much as he could bear. After

Using a Seiler's tube with a very fine orifice, which divides the spray more thoroughly and diminishes the impact.

the cleansing he inhaled a nebulized spray of pure eucalyptol (Merck) for from half an hour to an hour.

On the third day it was evident that the tonsillar surface was improving. The depressions were not so deep, and the projecting portions were rounded up.

The palatine portion looked cleaner, but the ulceration slowly extended into the uvula and soon involved the left half of its anterior surface and all of its left border. The posterior surface and the right side were intact.

On the uvula, however, the ulceration was quite superficial, apparently not destroying much more than the epithelial layer.

This was dried and touched lightly with a small pledget of absorbent cotton moistened *at its extremity only* with a fifty per-cent. solution of the nitrate of silver. This can always be done without producing any pain if properly managed. The method is to have the part dry; to have the cotton tightly wound on a probe so that the end shall be small and compact; and to wet only the end, so that the liquid is drawn upward by capillary attraction and no drop can be formed at the point. It is then touched to one point and held a moment, never moved about.

Under this treatment the progress was steadily toward recovery, which was completed at the end of four weeks.

A CASE OF

SUBCHORDAL SPINDLE-CELLED SARCOMA,

AND ITS SUCCESSFUL REMOVAL BY THYREOTOMY.*

By H. S. BERKETT, M.D., MONTREAL.

SENIOR DEMONSTRATOR OF ANATOMY AND LECTURER ON LARYNGOLOGY, MONTREAL UNIVERSITY.
LARYNGOLOGIST TO THE MONTREAL GENERAL HOSPITAL.

UPON May 30, 1891, I was called in consultation by the late Dr. George Ross to see Mrs. McQ., aged twenty-two years, in reference to marked dyspnea, evidently due to laryngeal obstruction, from which she was suffering.

The patient stated that she began to be hoarse four months ago, and that this had gradually increased until there was almost complete aphonia. Dyspnea set in four weeks ago and slowly increased, until within the past two weeks it had been so marked as to prevent the patient lying down, and for the past few days any attempt to lie down would bring on an attack of suffocation. Within this last mentioned period two days' inspiration studies had set in, accompanied by depression of the supraclavicular, infraclavicular and axillary regions.

The patient is thin and anemic-looking, in between eight and nine months' pregnancy (primipara), her facial expression is that of anxiety; sits in the upright position all the time, mouth widely open, and respiration is carried on with a good deal of distress; her voice is hoarse, and expiration is accompanied by marked stridor.

Facial and general features are absolutely negative regarding any phthisical, syphilitic, or malignant taint.

Laryngoscopic examination revealed a large subglottic tumor, occupying a considerable space below the cords, so that only a very small space remained for the use of an external larynx. The tumor had the posterior surface of the tumor on the posterior wall of the larynx, through which respiration is with great difficulty carried on.

The tumor of the larynx is of a fleshy red color and upon a peduncle about the size of a small nut.

The movements of the vocal cords are perfectly free and they

meet well over the surface of the tumor in the median line. The right vocal cord is congested at its anterior third.

I advised preliminary tracheotomy as being at the present moment urgent and necessary in order to relieve the dangerous supervening symptoms of possible suffocation. Consequently, on the following day I performed tracheotomy, being kindly assisted by Dr. Roddick.

Chloroform was administered only to incomplete insensibility. There was nothing unusual to note during the steps of the operation, further than that the isthmus as well as the lateral lobes of the thyroid gland were much enlarged, and coming down from the isthmus to join the transverse innominate vein were three very much dilated veins, each about the size of a goose quill. It was found necessary to ligate the middle one, which lay upon the center of the trachea, the others being held to one side. I decided to open the trachea as low down as possible, because it was uncertain how far down the tumor might extend into the trachea. Upon the introduction of the tube (Durham) the breathing at once became tranquil and easy.

Twelve days later, the patient having hitherto progressed satisfactorily, the temperature having never risen above normal, upon consultation with Dr. George Ross and Dr. J. C. Cameron, it was decided that premature labor should be induced, and with that in view Dr. J. C. Cameron undertook the charge of the case.

Two days subsequently the patient was delivered of a well-developed female child.

The influence of this delivery upon the condition of the tumor was striking. Laryngoscopic examination showed that the laryngeal tumor had decreased in size, leaving, consequently, a larger breathing space, and the hyperemia of the right vocal cord which was seen earlier in the progress of the case had completely disappeared, leaving it perfectly white, and when the tracheal wound was closed the patient could breathe more freely, though still the breathing was labored.

Three weeks after the confinement the operation for removal of the intralaryngeal tumor by means of thyreotomy was undertaken.

In this procedure I was kindly assisted by Dr. Shepherd. Chloroform was administered through the tracheal cannula by Dr. Evans.

The site of the operation was thoroughly cleansed by means of hot water and soap; the head thrown back, and a small yellow. The incision was made in the median line from the upper border of the thyroid cartilage to the lower border of the cricoid cartilage, continuing the dissection until reaching the thyroid cartilage, and during these steps there were several veins cut which bled very freely, and the amount of fat surrounding the structure which in the dissection readily exposing the thyroid cartilage; this when thoroughly exposed was freed from loose connective tissue, and the thyroid gland was then cut, and removed, and removed through the previously made incision in the upper border of the thyroid cartilage.

The alar were held apart, thus completely exposing the tumor, which was found to be a spindle-celled sarcoma, and removed by means of a sharp knife.

The tumor was found to be a spindle-celled sarcoma, and removed by means of a sharp knife. The tumor was found to be a spindle-celled sarcoma, and removed by means of a sharp knife.

The tumor was found to be a spindle-celled sarcoma, and removed by means of a sharp knife. The tumor was found to be a spindle-celled sarcoma, and removed by means of a sharp knife.

* A case of a spindle-celled sarcoma of the larynx, in the Montreal General Hospital, Montreal, Nov. 1894.

sion, and on the second it cut through the cartilage; in order then to bring them together, I passed three deep sutures (silk-worm gut), approximating thus the deeper structures; superficial ones closed the wound. The dressing consisted of powdered iodoform and bichloride gauze.

The tumor after removal weighed twelve grains, and measured eighteen millimetres long, twelve millimetres wide, and seven millimetres in thickness.

The tumor was kindly examined by Dr. Finley, who described it as "a spindle-celled sarcoma with the formation of strands of young fibrous tissue, rich in embryonic blood-vessels." This has kindly been corroborated by Dr. Wyatt Johnson and Dr. Adams.

The patient made an uninterrupted recovery, the temperature never rising above 98.5°; was up five days after the operation, and left for home four days subsequently.

Twelve days from date of last operation the tracheotomy tube was removed, and the wound soon closed.

However, just at the lower edge of the thyroid cartilage a small granulating opening remained, and in spite of all endeavors to close, it refused to do so, until one day, after searching for some foreign body which probably was preventing its closing, a buried silk-worm-gut suture was removed, and upon its removal the opening soon closed, and the granulating mass which was seen in the larynx at a point corresponding to the opening outside soon disappeared, leaving the anterior wall of the trachea quite smooth.

I frequently examined this patient, and saw her only four months ago, previous to her leaving the city permanently, and found the subglottic region perfectly normal in appearance and no evidence of any recurrence of the growth; the vocal cords retained the normal pearly white appearance and the voice was absolutely without any alteration in its natural tone.

This case, so far as I am able to ascertain from the literature at my disposal, stands unique, for I find no record of any case of subchordal spindle-celled sarcoma in which the operation of thyreotomy had been performed, and no evidence of its recurrence two years after its removal.

The operation of thyreotomy has frequently been performed for many morbid affections involving the vocal cords or the structure above and below them, such as papillomata, myxomata, fibromata, carcinomata, cicatricial stenosis, removal of foreign bodies, and lately for tuberculosis.

In the study of the statistics of the operation of thyreotomy, especially those tabulated by Bruns and Karl Becker, we find that of two hundred and fourteen cases in which thyreotomy was done for various conditions only eleven succeeded in effects which could be attributed directly to the operation itself. These were pneumonia (two), emphysema (three), edipnea (one), fibromata producing pulmonary stenosis (one), and tuberculosis (one). So far as the operation itself is concerned, it is one therefore practically devoid of danger, and if there is any danger, hemorrhage into the trachea at the time of the operation is the most to be feared.

In the case presented this was avoided and the use of a trachea tube away with the cartilage covering all the blood-tinged points before the wound was opened. As regards the trachea itself, the cartilage is cut upon the inside, and the operation is performed in such a manner as to effect upon the

voice entirely depends upon the seat of the lesion and on its special character" (Cohen).

"Some very conflicting opinions have been expressed with regard to thyreotomy, some asserting that it is an operation free from danger and threatening life, while others maintain the opposite. Probably Professor Virchow's opinion is correct—namely, that thyreotomy, performed in an otherwise healthy larynx, is an operation free from risk and danger" (Beverly, *British Medical Journal*, 1891, ii).

The late Sir Morell Mackenzie did not think ample room was obtained by division of the thyroid, and preferred to do tracheotomy and then remove *per vias naturales*, holding that the space obtained by thyreotomy was smaller than the glottis (Holmes).

Wagner believes that the danger to life from the operation itself is very slight. Wagner, in a paper on thyreotomy, states that "this operation should only be resorted to for the relief of urgent dyspnoea arising from laryngeal obstruction caused by the presence of benign neoplasms or a foreign body, and in which the operation *per vias naturales* is inadvisable or impracticable. In cases of malignant disease it should only be performed where there is a reasonable possibility of eradicating the disease thereby."

Regarding the operation of thyreotomy for tuberculosis, opinions are divided; according to Becker, relief is always given even when death is merely postponed; whereas A. Bergmann warns against operative interference in tuberculosis of the larynx by laryngo-fissure, scraping, and cauterization; he had signally failed in so treating two selected cases (Solis Cohen in Sajous's *Annual*, 1890 and 1891).

According to Wagner, the operation in tuberculosis is unjustifiable, and death, which is inevitable in these cases, is likely to be hastened by it.

The reasons for adopting the measure I did in this case rather than removing the growth *per vias naturales* are these:

1. The appearance of the tumor, as seen by the laryngoscope, and the history of its rapid development led me to believe that I had to deal with a tumor most probably malignant in its nature, and that its thorough extirpation could not be carried out satisfactorily except by thyreotomy.

2. It was impossible to tell by laryngoscopic examination whether the tumor was limited entirely to the larynx itself or had an attachment by a broad base to the anterior wall of the trachea.

3. From the hyperemic appearance which the tumor had, it was more than probable that removal of it piecemeal *per vias naturales* would have been attended with trouble—some hemorrhage into the trachea.

4. Presuming the growth to be malignant, its removal *per vias naturales* might have led to self-inoculation of other structures within the larynx through slight abrasion of the mucous membrane caused by operative interference.

5. To insure its thorough removal as far as possible *per vias naturales* would have entailed a long time in the training of the patient, which, under the then existing circum-

stances (pregnancy), might have been more trying and tedious than the operation then performed.

NOTE.—In May last I again saw this patient. There was absolutely no evidence of any recurrence, and her vocal cords perfectly clear and the patient's health very good.—H. S. B.

THE PATHOLOGY AND METHODS OF TREATMENT OF
HYPERTROPHIC AND ATROPHIC RHINITIS
(CHRONIC NASAL CATARRH)
WITH SPECIAL REFERENCE TO
THE WORK OF THE GENERAL PRACTITIONER.

By ALBERT PICK, M.D.,

BOSTON,
MEMBER OF THE MASSACHUSETTS MEDICAL SOCIETY.

A LARGE number of physicians exhibit indifference as regards the study of the pathology of the nasal and nasopharyngeal structures, the technique of examination for the purpose of making a proper diagnosis, and the advanced methods of treatment of their diseases.

Considering the frequent occurrence of nasal or nasopharyngeal malformations and diseases, which in the majority of cases cause the afflicted individual quite an amount of distress, and which could be easily corrected and cured if they would be recognized by the physician who is consulted for the relief of certain direct or indirect symptoms arising therefrom, such a state of indifference on the part of a number of physicians is hardly justifiable.

I shall principally confine myself here to the two affections which are the most frequent in occurrence, very distressing to the patient, and can be most easily recognized and treated—viz., *hypertrophic and atrophic rhinitis*, or, as they are often called in short, *chronic nasal catarrh*.

As a rule, the nose is regarded, as fittingly described by Dr. E. J. Berneingham, of Brooklyn (*vide New York Med. Jour.*, i, 1893), as the organ of smell and catarrh. It is also known that it is at times subject to polypoid growths and the like. A patient suffering from one kind or another of nasal or naso-pharyngeal trouble is, usually, without any attempts at an examination, advised to use salt and water, to be snuffed up or to be used by means of the nasal douche. Sometimes he is given some powder to be snuffed or some ointment to be applied into the anterior nares. There are also cases on record where patients have been advised to avoid a specialist, that catarrh is inevitable in such a climate as ours, and the like.

Now, some will think these statements exaggerated. To show, however, that this is not at all the case, I simply ask, *How many physicians make a thorough, systematic and positive rhinoscopic examination in patients with nasal troubles who apply to them for treatment, either for the primary nasal affection or disturbance, or possibly directly or indirectly on them?*

In order to treat a nasal or naso-pharyngeal affection intelligently it must be properly diagnosed. To diagnose correctly a chronic, chronic, nasal, or catarrh disease, we have to make a thorough examination of the parts with the

proper instruments. The same procedure is, therefore, necessary in attempting to make out any pathological process in the nose or nasopharynx, and such an examination is the more important here because we can not gain much information by our sense of touch.

It would therefore be desirable that every physician should be familiar with *anterior and posterior rhinoscopy*. It only requires a few inexpensive instruments and a few weeks of practice. A thorough examination of the nose and nasopharynx could then be made in every case; a deflected septum, hypertrophied turbinated bodies, adenoid vegetations, exostoses, polypi, enchondromata, etc., could be promptly recognized and referred to a rhinologist, who, after having restored the normal caliber of the nasal fossæ, could refer the case back to the corresponding physician for further proper treatment. Many a patient would thus be afforded prompt relief and physicians would not be obliged to feel embarrassed after their patients had consulted a rhinologist on their own account, and had been told that some of the above-mentioned pathological conditions of the mucous, cartilaginous, or bony structures of the nose or nasopharynx were the cause of all their trouble, and which had never been recognized by them.

Hypertrophic Rhinitis.—This affection is also known under the terms of hypertrophy of the turbinated bones or bodies, hypertrophic nasal catarrh, and hypertrophic ozena.

It constitutes an hypertrophy of the nasal mucous membrane, the result of chronic congestion, accompanying frequent attacks of *acute* or an existing *chronic* rhinitis. The development of an hypertrophic rhinitis is often aided and hastened by the employment of improper methods of treatment of cases of simple chronic nasal catarrh—e. g., the use of irritating snuffs, strong solutions of astringents, especially of nitrate of silver, and too frequent and too forcible application of the douche or similar apparatus. In a few cases it seems to arise idiopathically, like other hypertrophies.

The seat of predilection of the pathological changes occurring in hypertrophic rhinitis is the turbinated bodies, their peculiar anatomical structure especially favoring the development of superabundant tissue.

To demonstrate the hypertrophic changes there clearly, it will be well to review briefly the anatomy of these parts.

The turbinated bodies consist of the turbinated bones, covered by their mucous membrane and epithelium. The mucous membrane is very richly supplied with blood-vessels, especially with veins, and is quite elastic. It therefore has a *capillary and venous* character, and the mucous layers of tissues forms veritable "corpora cavernosa," becoming erect when filled with blood and collapsing after

The walls of these minute venous sinuses become thickened, and the mucous membrane a hyperplasia of connective tissue takes place. We have now an *enlarged and thickened* mucous membrane, the mucous membrane itself becoming thickened and the network of minute venous sinuses *distended* and *enlarged*, the mucous membrane becoming *thickened* and *enlarged*. We have now a pathological condition which is *characterized* by

hypertrophic rhinitis. Very frequently the septum also participates in these changes as regards its mucous membrane. The hypertrophic state is, as a rule, unequally distributed over the surface of the turbinated bodies and septum, giving the surfaces of these structures an uneven outline.

Hypertrophic conditions in the anterior portion of the nose are called *anterior hypertrophies*; those in the posterior portion, *posterior hypertrophies*.

In cases where the turbinated bodies and the septum in their posterior portions are involved, entire stenosis of the nasal canal of one or both sides may result.

Hypertrophic changes in the nose, as a rule, progress slowly. Therefore it is important to treat properly and promptly a simple chronic rhinitis before it reaches a state of hypertrophy.

The most important symptom complained of by the patient is obstruction in nasal respiration through one or both nares. The hypertrophied mucous membrane is more sensitive to atmospheric and other mechanical or irritative influences. The erectile part of the turbinated bodies can not as readily, or at times not at all, collapse, and as a result, distended with blood, together with the submucous hyperplastic tissue, they occlude one or both nasal cavities. If this condition is of a severe degree and constant, the patient acquires the habit of breathing through the mouth.

The physiological functions of the nose—to warm and purify the inspired air—is thus suspended. This may be, and often is, the starting point of pharyngeal, laryngeal, and pulmonary affections. The voice acquires a so-called “nasal twang” from interference with the nasal resonance. The face often exhibits an air of stupidity on account of the constantly open mouth. The openings of the tear-ducts and Eustachian tubes may also be occluded, thus causing trouble in the eye or ear. The sense of smell is impaired. Periodical frontal and supraorbital headaches are often complained of. The nasal secretion is increased, often of a yellow color and thick consistence, mixed with scabs, and of a peculiar, disagreeable odor, which latter also taints the breath of the patient. The increased secretions, which can not find a sufficient outlet by the anterior nares, flow back and down through the posterior nares, irritating the pharynx and larynx, producing a continuous *coughing*.

Viewed by anterior rhinoscopy, the mucous membrane of the anterior portions of the septum and of the inferior turbinated bones is either seen to be of normal color or reddened. The enlarged inferior turbinated and a part of the middle turbinated bodies are seen to reach into the nostril. The nasal cavity, at times only slightly, at other times more, still in some cases it will be seen to appear inflamed, and in some cases it will be seen to appear atrophic. The nasal cavity is often found to be empty, only to be entered by means of posterior rhinoscopy.

The hypertrophic, distended bodies are seen to be of a pinkish or reddish, polished, glossy surface. The secretions are usually determined by touch, the tip of the finger being used. The fluid, when well collected, is found to be of a yellowish or greenish color, and is found to be of a thick, sticky consistence.

The hypertrophic condition of the mucous membrane of the nasal cavity is often found to be of a yellowish or greenish color, and is found to be of a thick, sticky consistence.

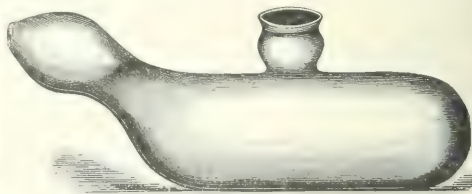
(adenoid vegetations) often accompany hypertrophic rhinitis.*

Now, as to the treatment of hypertrophic rhinitis.

Cleanliness is the foundation upon which rests all success in modern medicine and surgery. It is also of paramount importance in any and all methods of treatment of the affection under consideration.

The surface of the lining mucous membrane of the nose and nasopharynx must be thoroughly cleansed of the mucus, muco-pus, and scabs which continuously collect on it in this affection. No application—antiseptic, astringent, or otherwise—can be of any use unless it be applied to a perfectly clean mucous membrane. Which is the best way of cleansing the mucous membrane of the nose in hypertrophic nasal catarrh?

All douches, syringes, atomizers, etc., which place the force of the stream under the control of the patient are to be abandoned. They will do a great deal of harm. A simple douche, which makes the solution flow in and out slowly, and *without any force*, is to be selected. These indications are best met by Dr. E. J. Bermingham's douche.



Bermingham's nasal douche.

He gives (*loc. cit.*) the following directions for its use: “Having warmed the cleansing solution by placing an ounce phial containing it standing in a tumblerful of hot water for a few minutes, fill the douche, which has a capacity of about seven drachms—generally enough for a thorough cleansing. The funnel should now be closed with the tip of the index finger and the nozzle inserted into the nostril so that it closes the latter completely. Throw the head slightly backward, raise the finger closing the funnel, and allow the solution to enter the nostril and flow through it to the throat. When the solution is felt in the throat the flow may be checked by simply closing the funnel with the finger tip. The solution should be kept in contact with the parts for two minutes before clearing the nose and throat, and it should be used in each nostril. Breathe through the mouth while using the douche.”

Any other apparatus which throws any solution into the nose with force will by stimulation increase the hypertrophy, and may also cause serious trouble in the ear through forcible entrance of fluid into the middle ear by the pharyngeal opening of the Eustachian tubes.

The cleansing solution itself should be alkaline, antiseptic, and deodorizing. It should preferably be used warm. A simple and effective solution is the following: R Sodii

bicarb., gr. xxx; listerine, $\frac{1}{2}$ ss.; aquæ, q. s. ad $\frac{1}{2}$ iv. Seiler's alkaline and antiseptic tablets are very convenient to use. Formula: Sod. bicarb., borax, sodium benzoate, sodium salicylate, eucalyptol, thymol, menthol, oil of wintergreen. A fresh solution can always and readily be prepared. One tablet dissolved in two ounces of water is the proper solution. It may be made stronger or weaker. The nasal cavities should be washed out at least three times a day; more frequently if necessary.*

This treatment alone, if carried out conscientiously, will in many cases of simple chronic rhinitis, or in cases of slight hypertrophic conditions, yield very satisfactory results. Cases which present considerable hypertrophy of the turbinated bodies and the septum, adenoid vegetations, septal bony or cartilaginous spurs, or a considerably deflected septum, should as soon as recognized be transferred to a competent rhinologist for operative treatment, who will restore the normal caliber of the nasal fossæ, and then may refer back the case to the corresponding physician for further antiseptic, astringent, or other treatment, as the case may demand.

The pathological conditions referred to in hypertrophic rhinitis is, as a rule, remedied in the following operative manner by the rhinologist.

Hypertrophies of the turbinated bodies are made to shrink by the application of chromic, nitric, or glacial acetic acid; by the application of the thermo-cautery; or, if of a soft polypoid degeneration, they are removed by the cold wire or thermo-cautery snare, as is also done with polypi.

Bony or cartilaginous spurs of the septum are removed by the nasal saw, by burrs and electric motor, or by an extra strong probe-pointed bistoury.

Deviated nasal septa are straightened by the various methods, best suited to the individual cases, which are at present in vogue in nasal surgery.

Adenoid vegetations in the vault of the pharynx are removed either by post-nasal sitting forceps or by the more tedious and more satisfactory measure—the sharp post-nasal snare.

Any constitutional disturbance (anæmia, scrofulosis, constipation, etc.) must, of course, be met by the appropriate internal remedies. Faulty hygienic conditions also should claim our attention.

If hypertrophic rhinitis is, in due time, properly treated by the soothing and anæsthetic means referred to above, the majority of cases are treated here severely, with marked results in its removal. If negative in accomplishing these with infection results prominently on the part of the physician as well as the patient.

Cases of hypertrophic rhinitis which are either improper treated or left to themselves will sometimes undergo involution during general senile atrophy, remain stationary for long, or frequently merge into that form of chronic nasal disease known as atrophic rhinitis (see dry nose), or the simple benign form of nasal polypoid degeneration. We have

by this term atrophy of the mucous membrane of the nasal fossæ.

Other ætiological factors, beside hypertrophic rhinitis, are a dry and hot atmosphere, inhalation of tobacco or other smokes, and any other causes favoring accumulation and desiccation of the natural discharges.

This affection may be unilateral or bilateral.

When *atrophic rhinitis* occurs as a result of hypertrophic rhinitis, the pressure exerted by the adventitious cellular tissue upon the glands and blood-vessels causes interference with or destruction of the former and gradual absorption of the latter. As the destruction of the glandular elements progresses, the surface of the membrane becomes more and more deprived of the lubricating action of its secretion and is thus exposed to the direct action of the irritating agents which now remain in contact with it. As a consequence, superficial desiccation occurs, pressure is exerted upon the layers beneath, and this, coupled with the diminished nutrition occurring as a result of the decreased blood supply, sooner or later produces absorption of the greater part of the membrane, including the corpora cavernosa, and frequently the turbinated bones.

Those glands which are principally affected by the external irritant become engorged, and their apertures are the seat of minute abscesses. Owing to their great number and close proximity, the latter form suppurative areas over which the purulent discharges accumulate into masses more or less thick. The contact of these masses soon destroys the underlying ciliated epithelium, the cells of which are shed abundantly, and the discharges, not being softened by mucus or propelled by the to-and-fro motion of the cilia, remain over the seat of their production, to become dry and decomposed crusts by the evaporation of their watery constituents, until they are of sufficient thickness to be loosened by the exhaled current of air and discharged (Sajous).

The symptoms of *atrophic rhinitis* are, as regards any inconvenience or pain on the part of the patient, in most cases negative, nasal respiration being perfect. In chronic cases there is a feeling of great dryness in the nasal cavities and nasopharynx. Frontal headache is at times complained of, aggravated by cold or dust, the remains of the dry membrane being very sensitive. The sense of smell is more or less impaired, at times completely wanting, through the involvement of the peripheral branches of the olfactory nerve. A complete loss of the sense of smell is termed anosmia.

The most successful systems which look the patient through for treatment is the cold treatment of his nostrils. The fact that if the nasal cavity from falling anæmia, from hypertrophic rhinitis, from dryness, and from irritation, is in certain instances almost unfit for nasal respiration. There is then, pulmonary and general anæmia, a tendency toward blood loss or even diarrhoea, which are discharged through the nostrils of profuse nasal mucus.

On the other hand, the cold treatment is not a complete remedy for the disease. It is a remedy for the symptoms. We cannot do without a systematic treatment of the whole nasal system, so that

*Klein & O'Brien, of New York, use the following solution:—
 1. Potassium permanganate, 10 grains; distilled water, 100 grains; glycerine, 10 grains.
 2. Potassium permanganate, 10 grains; distilled water, 100 grains; glycerine, 10 grains.
 3. Potassium permanganate, 10 grains; distilled water, 100 grains; glycerine, 10 grains.

From a musical standpoint we have simply to deal with tonality, pitch, rhythm, and tempo. The first two represent the *musical* sound itself. The last two represent the method of execution of this tone: the enunciation as applied to voices and instruments. In other words, tone and its pitch are the factors standing for the sound produced by a voice or instrument; rhythm and tempo represent the technical part—the mechanical execution of the music produced.

Supposing now we adapt ourselves to terms as employed in music and adopt the following simple nomenclature for auscultating respiration:

1. *Tone*.—In the lungs we have only two tones—pulmonary (vesicular) and bronchial (tubular). "Quality," the term now employed, is an individual element of vocal or instrumental tones. Thus a person may have a barytone of a certain volume and range, but the quality of it is strictly individual—e. g., "metallic," "harsh," "melodious," "insinuating," according to the impression conveyed to the listener. Quality in music is the soul's speech, the means through which an artist expresses such feeling and thought as are ordinarily beyond words. Quality of voice is a thing which gives the hearer an idea of the singer's temperament, whether artistic or mechanical—a sympathetic expression or dry technique. In going into detail in connection with a bronchial or pulmonary tone, there can be no valid objection to giving one's impression of some individual quality. But "quality" is not a synonym for tone.

2. *Pitch*.—Both pulmonary and bronchial tones have a certain recognizable pitch which we should think of as a central norm, from which norm the pitch may, from functional or organic changes in the lung, become lower or higher. Silence is the highest kind of pitch, and in the further progress of disease is invariably followed, not preceded, by changes in tone—always from the pulmonary to the bronchial in progressive disease and the reverse during recovery. Now, when we have made ourselves acquainted with a tone and its pitch—with the music produced in the lung—we turn to its execution or technique. This technique consists of rhythm and tempo.

1. *Rhythm* is the characteristic of regular succession; in music, the partition of the piece into equal measures. Under normal conditions in the lung we only find of it as the regular succession of sounds. In disease we are all kinds of abnormal pauses and expirations, interrupted articulation or music as heard in "staccato," "staccatissimo" or "staccato" expirations or "staccato." The rhythm of succession in the music is continuous (musical) and of the tone is interrupted (staccato). A change from the continuous to an interrupted rhythm in respiration during the earliest beginning of a pathological condition, either fresh onset or aggrava. An illustration of staccato heard as what is known as "coughed inspiration" occurring only at expiration.

2. *Tempo* is nothing more or less than the speed of the rhythm. The tempo is varied rapidly to the extent of from sixteen to eighteen respirations to the minute, or from one to every five seconds. Now, faster or tempo, not the most primary and most frequent indication made it seems

This does not always materially interfere with the lucid interpretation of a composition, provided rhythm is not interfered with.

On the same principle hurried or much-retarded respiration is of prognostic value only when it breaks up the rhythmical sequence of the respiratory movement: just as accelerated action of the heart is dangerous only when it breaks up the interrupted rhythm (*staccato*) and merges the sounds and the pause into "slurring." In other words, a pathological condition becomes serious only when excessive rapidity or slowness of tempo converts a continuous respiration into an interrupted one in the lung and an interrupted rhythm into a continuous movement in the heart.

The importance attached to râles or rhonchi is another one of those traditions for which Noah and Methuselah should be held responsible. The transmutations accompanying functional or organic changes in the lung—whether mucus, pus, or blood—are not the pathological condition itself, nor do they give us any clue to the same. Their removal leaves the same condition to be ascertained by tone, pitch, rhythm, and tempo. Let us simply look upon them as a side show and speak of them as "associated transmutations."

What is here proposed is not in the nature of an ideal which can not be realized. We are not dealing with a vague and impracticable theory, but with a simple and readily comprehensible transfer of terms to their proper sphere, which is that of music. So far from complicating matters, it simplifies them and makes them far more readily understood.

In another paper I shall endeavor to show why sounds heard in condensation or excavation of lung tissue (infiltration and cavity) need no designations and definitions other than the ones mentioned above.

TRANSIENTS

Changes of Address. Dr. Howard A. KILPATRICK, 1115 N. First Street, Philadelphia, Pa. Dr. William R. MARRAS, No. 26 West Forty-first Street, Philadelphia, Pa. Dr. Samuel E. MILLIKEN, 1110 Diamond Street.

The Death of Dr. Charles T. Chase, formerly of the Navy. A plan for the burial of Dr. Chase, formerly of the Navy, is being arranged.

The Randall's Island Hospital. Dr. Samuel E. Milliken has been appointed Surgeon of the Hospital.

Naval Intelligence. The United States Navy has been informed that the British Government has decided to purchase the battleship *Albatross* for the British Navy.

Medical Intelligence. The United States Navy has been informed that the British Government has decided to purchase the battleship *Albatross* for the British Navy.

Medical Intelligence. The United States Navy has been informed that the British Government has decided to purchase the battleship *Albatross* for the British Navy.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by
D. APPLETON & CO.Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 17, 1894.

THE TREATMENT OF BLEEDING FROM THE NOSE.

THE *Revue Internationale de rhinologie, otologie et laryngologie* for August 10th publishes an article by Dr. Baumgarten, of Budapest, in which he recommends the following methods in the treatment of epistaxis: A thorough examination of the inside of the nose must be made in order to discover where the bleeding comes from. Usually there are to be seen at the anterior part of the septum, rarely elsewhere, one or more small superficial vessels of a red color, or else little nodules, erosions, and varicose veins, or a small empty vessel looking blackish on a red background. Occasionally the hæmorrhagic spot is covered with fresh blood-crusts which must be softened and carefully raised in order to expose the appearances referred to. If there is nothing of a suspicious nature to be seen, the patient must be made to blow his nose several times. Another method is to apply a tampon of wet cotton to the septum, and press it more and more firmly against the place until the morbid spot bleeds. Sometimes this brings on at once a more abundant hæmorrhage, which makes the continued application of the tampon necessary before the bleeding spot can be destroyed. For this destruction the author has used the galvanic cauterity or chromic acid, sometimes both. He touches the spot with the cauterity, which is very painful, and the wire loop can not always be withdrawn while it is still red, so that the eschar is apt to be removed at the same time. Then the small wound bleeds feebly, and it should be cauterized with chromic acid, which, according to Dr. Bresgen, is an excellent hæmostatic. When operating on children, as in those persons Dr. Baumgarten uses the chromic acid only, and the cauterization must be repeated two or more times, either ten or fifteen minutes, or after a fresh hæmorrhage. This treatment must be continued until a plainly visible cicatrix is produced. The patient must be told not to scratch the eschar, to apply a little oil or grease to the spot, to keep quiet, to avoid handling his nose, and not to blow it too hard.

A second tampon is then pressed against the spot. The epistaxis is thus often arrested. Afterward the place may be cauterized with chromic acid. The author has often succeeded in covering the bloody points with a layer of chromic acid by pushing the tampon forward very gently; it can not always be removed immediately, because the wound will bleed anew, and it must be left until the following day or longer if necessary. The author, however, has never had to repeat this for more than three days. He always uses cotton saturated with carbolic acid or some other aseptic cotton, but never iron perchloride, as that only cauterizes.

If the blood runs through the tampon or into the pharynx, the physician should use the same means as those employed in the more serious hæmorrhages. After the part has been washed with warm water, a strip of iodoform gauze as wide as a finger should be pushed as far as the choana; then the entire nasal fossa should be packed with the same material. This may be done easily and without pain; it is better than Belloq's method, and may be accomplished even with a contracted nostril. With regard to Belloq's method, Dr. Baumgarten thinks it is not sufficient and that it may produce accidents to the ear, etc. In one case, that of an old man who was the subject of advanced arteriosclerosis, Belloq's tampon was inserted, and several tampons were added anteriorly. Two physicians had tried to stop the bleeding, but their efforts had been of no avail. The velum of the palate had been cut, and it was ulcerated and edematous. The author, who was called in, immediately removed everything, and while the bleeding continued he applied strips of iodoform gauze, and two days afterward the hæmorrhage was arrested.

As a palliative method, or in cases where the anterior tampon is not efficacious, or where the patient is taking care of himself pending the physician's arrival, the author recommends the use of warm water, which is a better hæmostatic than cold water or ice water, or else lemon juice. A solution of iron perchloride is an excellent hæmostatic, he says, but it cauterizes the neighboring region and prevents the physician from distinguishing the diseased spot.

When the hæmorrhage finally stops, and the bleeding points are found, they must be cauterized. There is no harm in cauterizing somewhat around the bleeding spot; on the contrary, the indications are to burn the entire vicinity. In cases of arteriosclerosis the author has been obliged to cauterize the entire pituitary surface as far as the choana as the iodoformed strips were removed one after another. These cauterizations should be repeated several times, and every suspected place covered anew with chromic acid. These tampons of iodoform gauze are not disagreeable to the patient, and they may be left for two days. Before removing them the nose should be washed with warm water, and the strips of gauze should be drawn away very gently in order to prevent the hæmorrhage from breaking out again, and any suspected places immediately cauterized, even at the risk of touching a healthy spot. The patient may take wine and food, but should avoid coffee, tea, and effervescing drinks. All internal medicines are useless and harmful.

MINOR PARAGRAPHS.

THE CÆSAREAN OPERATION AFTER VERSION AND DECAPITATION.

In the *Nouvelles archives d'obstétrique et de gynécologie* for October we find an abstract of an article published in the *Ugeskrift for Læger*, of Copenhagen. It describes a case of labor in which the patient was a primipara, forty years old. The head presented, and was movable and situated high. The umbilical cord and one hand, together with a forearm, had prolapsed. The pelvis was contracted. Version and extraction were performed with the patient under the influence of chloroform. The body was disengaged, but not the head. As the neck was felt to be torn, the separation of the head from the trunk was completed. Then the Cæsaean operation was performed for the extraction of the head, which was now tightly engaged at the superior strait, whence it was dislodged with two fingers introduced through the uterine orifice. The woman got well, but only after a very long time, during which she had fever and peritonitis.

THE ACADEMY OF MEDICINE'S ANNOUNCEMENTS.

The inaccuracies that are to be found as a general thing in the announcement cards issued by the New York Academy of Medicine seem to be on the increase. On the last one that has reached us we notice the following: "Hemorrhagic," "discussion," "resumé," "each resident fellow . . . they paying," etc., and "antiflexion." It is simply disgraceful for a learned body to commit such a blunder.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 12, 1894:

DISEASES.	Week ending Nov. 5.		Week ending Nov. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	6	24	1
Scarlet fever	21	6	22	6
Cerebro-spinal meningitis . .	0	0	0	0
Meningitis	29	4	41	1
Diphtheria	28	20	16	11
Scarlatina	1	0	0	0
Tuberculosis	25	7	110	194

The New York Academy of Medicine.—The programme

for the last century, on Thursday evening, Nov. 15, has been given a paper entitled *Further Considerations on the Treatment of Malignant Tumors with the Curative of Hyperthermia and Heat* by Professor J. W. Williams, M. D., and the Friday Morning paper entitled, *An Improved Case of Cancer of the Uterus*, by Dr. Joseph D. Rogers.

At the anniversary meeting, to be held on Wednesday evening, Nov. 20, next, Dr. Charles L. Dana will deliver the annual address.

At the next meeting of the section on Ophthalmology and Otology, on Monday evening, Nov. 19, next, papers are to be read as follows: On the Possible Hereditary Origin of the Striated Affections of the Retina, by Dr. Ward A. Holden; The Continued action of the Single Extracranial Oculomotor, by Dr. E. W. Hing; and The Recognition of a New Point of Fixation in the Eye, by Mr. F. Van Dine.

At the next meeting of the section on General Medicine, on

Tuesday evening, the 20th inst., Dr. Thomas H. Southworth will read a paper entitled *A Résumé of the Subject of Biliary Calculi*.

At the next meeting of the Section in Obstetrics and Gynecology, on Thursday evening, the 22d inst., the following-named papers are to be read: Entanglements and Shortening of the Umbilical Cord, by Dr. T. J. McGillicuddy; and The Surgical Treatment of Antelexion of the Uterus, by Dr. Charles Bell White.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 28th inst., papers are to be read as follows: Rheumatism and Allied Diseases of the Pharynx and Larynx, by Dr. W. Freudenthal; and Perforations of the Nasal Septum, by Dr. A. Rupp.

The University of Southern California.—Dr. Walter Landley, who has resided for some time in Los Angeles after an absence of three years, has been elected to the chair of gynecology in the medical school.

Society Meetings for the Coming Week:

MONDAY, November 19th: New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Chicago Medical Society.

TUESDAY, November 20th: Mississippi Valley Medical Association (first day)—Hot Springs; New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and Westchester, N. Y.; Baltimore Academy of Medicine.

WEDNESDAY, November 21st: Mississippi Valley Medical Association (second day); Medical College of Virginia, New York; Northwestern Medical and Surgical Society of New York (private); New York Society for the Relief of Widows and Orphans of Medical Men (annual); New Jersey Academy of Medicine (Newark).

THURSDAY, November 22nd: Mississippi Valley Medical Association (third day); New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, November 23rd: Mississippi Valley Medical Association (fourth day); Baltimore Clinical Society; Chicago Gynecological Society.

SATURDAY, November 24th: New York County Medical Society (private).

Proceedings of Societies

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of November 14th.

The President, Dr. H. James Watson, in attendance.

(The full minutes.)

Ice-cold Applications in Acute Pneumonia.—Dr. THOMAS

J. McClelland, of New York, read a paper on the use of ice-cold applications in acute pneumonia. He stated that he had used ice-cold applications in the treatment of acute pneumonia in a number of cases, and in every case he had found it to be of great benefit. He stated that he had used ice-cold applications in the treatment of acute pneumonia in a number of cases, and in every case he had found it to be of great benefit. He stated that he had used ice-cold applications in the treatment of acute pneumonia in a number of cases, and in every case he had found it to be of great benefit.

catarrhal pneumonia, or in both forms of the disease? In his earlier experience he had been inclined to believe that it had only been adapted to the treatment of the croupous variety, but further familiarity with the measure had taught him its use in the acute catarrhal form. He had also given it a trial in chronic broncho-pneumonia and in pulmonary phthisis, but with rather indifferent results, if not with positive harm in some cases. He admitted, however, that in several cases of this kind it had seemed to do exceedingly well. It must be borne in mind, too, that the ice bag had been strongly recommended by the late Dr. Brehmer and by Dr. Detwiler and others in the treatment of chronic lung trouble, but with such excellent testimony in its favor it was very probable that many did not yet understand the specific indications for its use.

Besides being useful in croupous pneumonia and in acute catarrhal pneumonia, it also had excellent effects in the capillary bronchitis of infants and in the catarrhal pneumonia which followed measles, diphtheria, and scarlet fever.

It was also desirable in this connection to say something regarding the heart in this disease. From the tenor of much that was said and written on pneumonia at the present time, one received the impression that more was to be feared from engorgement than from pulmonary failure. That the heart's function was impaired no one would deny. Indeed, this could not be otherwise, for the heart and lungs had a common nerve supply and were bound closely together by the pulmonary blood-current, and whatever invalidated one must also affect the other; but he believed that the doctrine that pneumonia became fatal because the heart was unequal to the work of forcing the blood through the engorged lungs, and that all that we were required to do was to stimulate and to goad this organ, unmindful of what was going on in the lungs, was as imaginary in its conception as it was fatal in its practice.

The pulmonary circulation was undoubtedly obstructed, and there was no question but that the heart chafed, fretted, and became seriously embarrassed. Dr Wilson has said that "One of the most important consequences of pneumonia on the circulation is the occasional occurrence of thrombosis in the pulmonary vessels leading to the affected part. This event, caused in all probability by the retarded circulation in the lung, is not uncommon, and may, by extending to the larger branches of the pulmonary artery, be a source of hemorrhage ending even in death, and may also, in great probability, retard the process of resolution and the subsequent convalescence." But was this any reason why we should whip up this organ in the hope that it might get up its own steam? Was this sound sense or physiological reasoning? No. We must discard this cart-before-the-horse theory, and make strenuous efforts to remove the difficulty in the lung, and in this way liberate the heart from its embarrassed position. Thus, if the vessel which carries the arterial blood to the lungs becomes plugged, the flow of blood will stop, and even the exudation in the affected lung, it is well known, will cease. The heart will become congested, and if such a case occurs, the physician will have to deal with the fact that the left ventricle has been transformed into a chamber from whence he has to draw his water.

In discussing Dr. May's call for the increased suppression of such a typical drug law, without the health care law, Mr. May said, "In general America, and I'm sure you're going to want to promote that, the more healthy, although, obviously, applied, would be the more in the use of pharmaceuticals. It's not that I'm based on what he has had in the two papers and in some of others. In his numerous papers, or 400, more than 100,000, suppression of medical laws, from 1980 to 1990, there had already been a significant increase. The prohibition of the law, but in fact, it

ceived abstracts of seventeen other cases by Dr. Jackson, of Brockville, Ontario, together with seven cases collected by himself, without a death, the histories of which, and of those of Dr. Jackson, he had not had time to write out—making in all seventy-four cases of pneumonia treated with cold applications, and two deaths, or a death-rate of 2·7 per cent.

Now the death-rate from pneumonia, when treated according to the current methods, was variously estimated from twenty to thirty per cent.; hence the results from the cold-water treatment were at least ten times as good as those which were obtained by other methods. In addition to the use of ice, most of the patients had received quinine, acetate-of-ammonium mixture, strychnine, digitalis, morphine occasionally, a nutritious diet, etc.

DR. ALFRED STENDEL disagreed entirely with Dr. Mays as regarded the heart in pneumonia. He had seen a great deal of pneumonia clinically, but a great deal more pathologically. He had never made a post-mortem in pneumonia in which he had not found some cardiac thrombosis. He had seen the thrombosis of such a character that it was difficult to imagine how any circulation could be carried on during the last moments of life. Of course, in some cases it was difficult to determine whether the thrombi were ante-mortem or post-mortem, but in most cases the manifestly ante-mortem character of the thrombi showed that the heart must have been seriously embarrassed. It was certainly the opinion of most authorities that the heart was seriously embarrassed, and post-mortem experiences would indicate the same thing.

Dr. J. M. ANDERS said that he had been somewhat astonished to hear the reader of the paper take the position that the fever pneumonia was in all probability the result of the localized inflammation. The localized inflammation might to some extent show the degree of infection, but its presence did not prove that this was not an infectious disease. He inclined to the view that the temperature was an indication of the severity of the type of infection, and not of the severity of the local inflammation.

He was always glad to hear a paper on the use of cold. Cold, whether locally or generally applied, could have but one effect in this disease, and that favorable. If applied locally, as suggested, it would undoubtedly mitigate the local inflammation to some extent, but it could not in an acute infectious disease control the course of the ailment to any extent. He did not believe that there was anything that would entirely control the course and symptoms of pneumonia, simply because it was an acute infectious self-limited disease. The best use of cold would be next to the treatment by a case of pneumonia. It was very common for a patient where the pneumonia was ordinarily good, the temperature was only moderately high, and those were the cases where cold would be most beneficial, or tepid bath met many more indications and was more efficacious. Even in the summer he had found that the presence of pain, hence this should be got rid of early. The best method of treating pneumonia, he thought, was to give a patient a hot drink, with perspiration. The best way to relieve the mind of a patient was to make him understand the nature of his condition and what to expect. The relief of the nervous system brought relief to the patient himself. It was best practice to encourage the cold during the first part of early stages such as a simple catarrhitis, but after the third day the heat of the body must be kept up and no more than a moderate amount of steady heat maintained. After the fourth day the use of heat indicated that the nature of the

6089

[illegible]

ment of typhoid fever during the past few months. He recognized that the general application of cold or cool water was productive of rest and of better respiration, and it had a general tranquilizing influence by its reduction of temperature. He was led to expect that its application in pneumonia would be advantageous. He freely admitted, however, that he had had no direct experience in the use of local application of cold in pneumonia. He was ready to try it in any case where it might be applied generally or in the form of a bath, and he believed that we might expect decided advantages from its use.

Dr. LAWRENCE WOLFF had had some experience with the use of cold in pneumonia. Two years before he had employed the cold bath in the treatment of pneumonia in his hospital cases, but the results had not been so favorable as with other methods. He had used the local application of cold with more advantage. Dr. Da Costa had taught many years ago that the ice poultice was one of the best applications, and relieved pain better and stimulated respiration perhaps better than any other application. It had been productive of great good in the speaker's hands.

Dr. JOHN AULDE's object in speaking was rather to make a suggestion to the reader of the paper in order to establish some physiological basis which might be of further value as indicating the effect which cold applications produced in pneumonia. The empirical deduction as to the value of ice in pneumonia seemed to be fairly well founded, and would have been accepted ten or fifteen years ago as very good evidence, but at the present time it seemed to him that something more was demanded. It was hardly worth while nowadays to speak of "vital force," because we could go closer to life than that term would indicate.

The use of the cold bath in typhoid fever had been referred to and its virtues highly lauded. If the cold bath was useful in typhoid fever we should be able to make some observations which would give us some exact idea of the effect which it produced. It would cause surprise if he were to prophesy that within two or three years some one would come before this society and advocate the use of massage in the treatment of pneumonia. It was only a few months since a paper had been published by Dr. Mitchell referring to the wonderful effect of massage in anemia, showing that it had increased the number of red and white corpuscles.

In pneumonia we had rather a peculiar condition, different from that seen in typhoid fever. Dr. Osler had made some observations on the changes in the blood in this disease. He had found that shortly after the leucocytes began to increase in number there was a defervescence, and a favorable change took place. If the number of leucocytes was large, that is, if a general leucocytosis took place—he was able to say that the patient would recover, even if the temperature had not changed. It appeared from these facts as if leucocytosis, but if leucocytosis did not occur, the case was not so favorable. The cold bath was said to produce a defervescence, and a favorable change took place. If the cold bath was valuable in that disease, it seemed probable that it might produce the same result in pneumonia. There, there was a leucocytosis, but it was not so general as in typhoid fever.

The speaker suggested that the blood should be examined in cases of pneumonia, and that the number of leucocytes should be counted. He suggested that the number of leucocytes should be counted in cases of pneumonia, and that the number of leucocytes should be counted in cases of pneumonia.

Dr. FARRINGTON said that Dr. Mitchell had not sufficiently emphasized the relation of the number of leucocytes to the prognosis in pneumonia. He thought that the number of leucocytes should be counted in cases of pneumonia, and that the number of leucocytes should be counted in cases of pneumonia.

Dr. AULDE said that of course we were not assuming that there was an increase in the number of corpuscles *de novo*. If those out of the current were brought into the stream by the contraction of the vessels it was substantially the same thing. This brought out the leucocytes that were instrumental in maintaining the antiseptic condition of the blood, and, with the contraction of the blood-vessels produced by the cold, the red corpuscles carried oxygen to the tissues and took away carbonic acid and other waste products.

Dr. MAYS remarked that Dr. Aulde seemed to lay great stress on the fact that leucocytes were present in pneumonia. Leucocytosis was present in many conditions, both normal and pathological. Every time we took a drink of beer, or ate a beefsteak, or drank bitters, leucocytogenesis was increased. He did not think that the fact that the number of leucocytes was increased was of any great advantage in the successful treatment of pneumonia.

Dr. Stengel had referred to the presence of thrombi in the pulmonary blood-vessels in pneumonia, and the speaker thought he must have read his own paper to poor advantage if he had not succeeded in making plain his belief in the existence of this condition. Indeed, he had invoked the high authority of Dr. Fox to show this. He thought his intention had been misconceived by Dr. Stengel. The point that he had tried to make clear was that this thrombosis led many practitioners to try to whip up the heart to perform the impossible task of pumping blood through the thrombotic vessels in the lungs. They lost sight of the fact that the foundation of this thrombosis existed primarily in the lungs. They did not pay any attention to its removal in their treatment. The patient died, and they believed that he died because the heart had failed to perform its duty, while in truth death was caused by pulmonary failure.

He knew that Dr. Anders had made use of cold, and he thought that his results had been rather favorable. He spoke of the fever as an indication of the extent of the infection. If by infection he meant the amount of disease in the lung, the speaker could hardly indorse the statement. He had in some of his cases seen high fever where there had been a small amount of infiltration. In one case particularly, seen three years ago, the amount of infiltration at the base of one lung had been so slight as to be detected with difficulty, yet that patient had had a temperature of 106° and 106.5° , and had died in eight days. He had not applied ice in that case, for he had not then known its great value. He wished that he had known, for he believed he could have saved the life of a dear friend. He inferred from what Dr. Anders had said that he had not applied ice assiduously and persistently, for had he done so Dr. Mays thought that he would not have said that he could not control the respiration in pneumonia by the application of cold. He expected in every case where ice was applied to have the temperature fall, the pulse fall, and the respirations fall. He did not think that the use of tepid or even cold baths was of service in pneumonia. The fever in pneumonia was different from that in typhoid fever. It did not yield to general cold as the fever in typhoid did. He thought that if the prejudice against the application of ice could be removed this treatment would be more thoroughly tried, and that it would be found to be the most appropriate and most efficacious treatment for pneumonia. This had been not only his experience but also that of others. It had been almost uniformly successful, in seventy-four cases there had been only two deaths. He did not say that this proportion would be maintained, but the treatment certainly had a great influence upon the case, previous to the time it commenced and altered the condition in the lung and this was as much as could be expected from any measure.

ter on wet ink? This is a simple action, and enough moisture is left for thorough examination. Again, on page 30, the Es-march roll-tube method is given in the old style. The rubber cap is used and the tube is rolled in ice water. The American method is much better—the tube is rolled in a slanting groove made on a block of ice by a tube containing hot water. The chapter on water examination might, perhaps, be more practical if there were an additional lecture upon the examination for intestinal bacteria, because this is the most valuable examination. When sewers leak into wells, or when water supplies are contaminated in any way, typhoid or other intestinal bacteria are the micro-organisms we must look for, first using Theobald Smith's grape-sugar fermentation test, and then the litmus-agar plates. Non-pathogenic bacteria also may, of course, be studied after this plan.

Home Treatment for Catarrhs and Colds. A Handy Guide for the Prevention, Care, and Treatment of Catarrhal Troubles, Cold in the Head, Sore Throat, Hay Fever, Hoarseness, Ear Affections, etc. Adapted for Use in the Household, and for Vocalists, Clergymen, Lawyers, Actors, Lecturers, etc. By LEONARD A. DESSAR, M.D., Visiting Laryngologist to St. Mark's Hospital, etc. Illustrated. New York: Home Series Publishing Company, 1894. Pp. vi-3 to 118.

In this little volume the author has aimed to present the results of his extensive clinical experience in a practical and untechnical manner, so that the general reader may find it a reliable guide for the proper care of the throat, nose, and ears, as well as a manual for the prevention and treatment of catarrhal disorders of those organs. As is implied in the preface, a large amount of needless suffering would be avoided if laymen possessed better information regarding the structure and functions of those important organs, as well as a knowledge of the best means of keeping them in a normal state, or of caring for them on the first appearance of any abnormal condition. The author has no intention of supplanting the laryngologist by the directions he gives, but rather of anticipating the advent of the physician by immediate treatment.

While occasionally the author, in the fullness of his own knowledge, seems to have pronounced on the intelligence of the reader, and especially on the latter's capacity for education and discrimination, in general his advice is appropriate and given in language that may be understood by every body.

The work is essentially practical, and it will undoubtedly prove very useful to a number of persons who are not so fortunate as to have a physician with them, or who will

Journalists at the Disposal of the Press. Arranged in the form of questions and answers. Prepared according to the methods of Mullins and Peck, grammar, sentence, etc. (L. H. 1111) by R. M. D., General Training of English, Mathematics, and College Philosophy, etc. Philadelphia: W. H. Saunders, 1904. Pp. 16 (14). (Price, 8c). (Standard Spelling, revised.)

Let us assume, without hypothesis, that human free will is a pure *ex nihilo* free will without antecedent influence of either a past genetic or prior of *Adams* is based on the fundamental postulate that human free will is antecedent to natural genetic influences, and if so, then will suppress the human cause of destruction of our human world by genetic and laws.

The reasons of the oil is mostly concerned the principal part for learning the skill required, the methods of working, the equipment, the diagrams are graphically presented, and the various theories and their practical application are explained.

The volume is above the average of works of this class. We note an error on page 69, in the explanation of the abbreviations A. D. and A. S. as *auditus dextra* and *auditus sinistra*; either they should read *auris dextra* and *auris sinistra* or the adjective should be masculine if *auditus* is employed. We believe a better definition of sound than that given—"a peculiar sensation excited in the organs of hearing by the vibratory motion of bodies"—would be: "Sound consists of vibrations that are communicated by a sounding body to a surrounding medium." The sensation is produced by the action on the auditory apparatus by the sonorous vibrations. Our best physiologists divide the organ of hearing into the sound conducting and the sound-perceiving apparatus, thereby implying the existence of sound extrinsic to any auditory apparatus. To a completely deaf person there is no such thing as sound, except as an abstract idea, but that fact does not eliminate the existence of sound to one whose organs are functionally capable of audition.

The negative answer to the question: "Can sound exist without the presence of an organized being to perceive it?" seems inappropriate, and involves a nice metaphysical discussion. Substitute *light* for *sound* and the text would read: "Light is a sensation, and should carefully be distinguished from the vibrations that produce it." Why the question is introduced is not apparent.

Trans. Assoc. Am. Physicians, 1893, 1, 10. By H. B. VAN DUSEN, M. D. Oxon., F. R. C. P., Physician to the Westminster Hospital and to the East London Hospital for Children at Shadwell, etc. New York: William Wood & Co, 1893. Pp. xiv+433.

THE author states that this volume represents the results of his records and recollections during nearly twenty years' experience in children's hospitals, and as an *ipse dixit* we may accept the work and not enter into any discussion of a number of subjects wherein the author's views differ from those entertained by many well-known pediatricists. His regard for the value of experience in writing on a topic is shown by the omission of variola and some other subjects because he considered his personal experience insufficient.

Furthermore, Dr. Donkin assumes that his reader is conversant with the general knowledge of the diseases discussed, and he emphasizes only the points pertaining to childhood. But he does not consider the subject of children's diseases as, strictly speaking, a speciality; and we thoroughly concur in his dictum that "it may be safely assumed that, however great the practical difficulties may be, the best diagnosis and treatment in this branch of clinical study, the best diagnosis and treatment will be accomplished by those who have concurrent experience of diseases in general at all times of life."

The author suggests the fact that a more "hard" personality type is more resistant to the stress of the situation is not the result of a more "hard" personality type, but the result of a more "hard" personality type. In the consideration of alimentary and nervous disorders, attention is directed to the fact that these disorders are not the result of a "hard" personality type, but the result of a "hard" personality type. The author suggests the fact that a more "hard" personality type is more resistant to the stress of the situation is not the result of a more "hard" personality type, but the result of a more "hard" personality type.

seem meager, as a rule he discusses the essential features and always endeavors to leave the stamp of his opinion, be it with or against that popularly entertained.

The volume is written in an easy, pleasing style, and merits the consideration of those interested in children's diseases, and who is not?

BOOKS, ETC., RECEIVED.

Practical Urinalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M. D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston, etc. With Numerous Illustrations, including Photo-engravings and Colored Plates. Philadelphia and London: The F. A. Davis Company, 1894. Pp. xiv-357.

A Text-book of Pathology; Systematic and Practical. By D. J. Hamilton, M. B., F. R. C. S. E., F. R. S. E., Professor of Pathology, University of Aberdeen. Copiously Illustrated. Vol. II. London and New York: Macmillan & Co., 1894. Part I. Pp. xxii-515. Part II. Pp. 515 to 1139. [Price, \$10.]

Syllabus of Lectures on Human Embryology; an Introduction to the Study of Obstetrics and Gynecology. For Medical Students and Practitioners. With a Glossary of Embryological Terms. By Walter Porter Manton, M. D., Professor of Clinical Gynecology and Lecturer on Obstetrics in the Detroit College of Medicine, etc. Illustrated with Numerous Outline Drawings. Philadelphia: The F. A. Davis Company, 1894. Pp. vi-125.

Home Treatment for Catarrhs and Colds. A Handy Guide for the Prevention, Care, and Treatment of Catarrhal Troubles, Cold in the Head, Sore Throat, Hay Fever, Hoarseness, Ear Affections, etc. Adapted for Use in the Household, and for Vocalists, Clergymen, Lawyers, Actors, Lecturers, etc. By Leonard A. Dessar, M. D., Visiting Laryngologist to St. Mark's Hospital, etc. Illustrated. New York: Home Series Publishing Co., 1894. Pp. vi-3 to 118.

The Modern and Humane Treatment of the Morphine Disease. By J. B. Mattison, M. D. [Reprinted from the *Medical Record*.]

Rational Medicine and Charlatany. By Burnside Foster, M. D. [Reprinted from the *Northwestern Lancet*.]

The Great Plague of London. By Burnside Foster, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Morphinism in Medical Men. By J. B. Mattison, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Medical Jurisprudence. By George F. Moore, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Medical Jurisprudence. By George F. Moore, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Medical Jurisprudence. By George F. Moore, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Medical Jurisprudence. By George F. Moore, M. D. [Reprinted from the *Journal of the American Medical Association*.]

Dermoid Cyst; Broad Ligament Cyst; Vicious Union of Cervix with Vagina. By George Erety Shoemaker, M. D. [Reprinted from the *Annals of Gynecology and Paediatrics*.]

On the Effect of giving Lævulose and Inulin to Patients suffering from Diabetes Mellitus. By W. Hale White. [Reprinted from *Guy's Hospital Reports*.]

Des Abcès péri-amygdaliens. Par A. Gouguenheim et M. Ripault. [Extrait d'*Annales des maladies de l'oreille et du larynx*.]

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Vols. I, II, III, IV, and V. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1894.

Travaux d'électrothérapie gynécologique. Archives semestrielles d'électrothérapie gynécologique fondées et publiées par le Dr. G. Apostoli, vice-président de la Société française d'électrothérapie, etc. Paris: Société d'éditions scientifiques, 1894. Vol. I, pp. vii-3 to 720.

Medical Jurisprudence, Forensic Medicine, and Toxicology. By R. A. Withhaus, A. M., M. D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A. B., LL. B., Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with the collaboration of August Becker, Esq.; Charles A. Boston, Esq.; W. N. Bullard, M. D.; J. Clifton Edgar, M. D.; D. S. Lamb, M. D.; W. B. Outten, M. D.; E. V. Stoddard, M. D. Hon. Goodwin Brown; J. C. Cameron, M. D.; E. D. Fisher, M. D.; H. P. Loomis, M. D.; Roswell Park, M. D.; Irving C. Rosse, M. D.; J. H. Woodward, M. D.; George Woolsey, M. D.; J. Parmenter, M. D.; J. C. Johnston, M. D.; W. T. Parker, M. D. Volume Two. New York: William Wood & Co., 1894. Pp. 5 to 751.

Physiology for Beginners. By M. Foster, M. A., M. D., F. R. S., Professor of Physiology in the University of Cambridge, and Lewis E. Shore, M. A., M. D., Fellow of St. John's College, Cambridge, etc. New York and London: Macmillan & Co., 1894. Pp. ix-241. [Price, 75 cents.]

Diagnosis, Differential Diagnosis, and Treatment of Diseases of the Eye. By A. E. Adams, M. D., Instructor in Diseases of the Eye in the Post-graduate Medical College, etc. New York and London: G. P. Putnam's Sons, 1894. Pp. 94.

The Pocket Anatomist (founded upon "Gray"). By C. Henri Leonard, A. M., M. D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynecology, Detroit College of Medicine, etc. One Hundred and Ninety-three Illustrations. Eighteenth Revised Edition, containing Dissection Hints and Vascular Anatomy. Detroit: The Illustrated Medical Journal Company, 1894. Pp. 399. Price, \$1.

The Proceedings of the Fourth Annual Meeting of the Association of Military Surgeons of the United States. Held at Washington, D. C., on May 1, 2, and 3, 1894. Vol. IV.

Transactions of the Medical Society of the State of Pennsylvania, at its Forty-fourth Annual Session, held in Philadelphia, 1894. Vol. XXV.

Transactions of the American Otological Society. Twenty-seventh Annual Meeting. Arlington House, Washington, D. C., May 29, 1894. Vol. VI, Part I.

Report of the Trustees of the Newport Hospital, presented to the Corporation at the Twenty-first Annual Meeting, July 19, 1894.

Report on Typhoid Fever in the District of Columbia submitted to the Medical Society of the District of Columbia to

the Committee on the District of Columbia of the United States House of Representatives, June 14, 1894.

Customs Law of 1894 compared with the Customs Law of 1890, with Rates of the Mills Bill of 1888 and the Wilson Bill of 1894. With Table of Average and *ad valorem* Rates. Second Edition.

State Board of Health. Report of Willis G. Tucker, M. D., Ph. D., Director State Laboratory. [Extract from the *Fourteenth Annual Report*, 1896.

The Treatment of Erysipelas. By J. M. Anders, M. D., Ph. D.
[Reprinted from the *Therapeutic Gazette*]

Points in the Etiology and Clinical History of Erysipelas.
By J. M. Anders. [Reprinted from the *Journal of the American Medical Association.*]

Beriberi, with Report of Cases. By J. M. Anders. [Reprinted from the *Medical Bulletin*.]

Are there Degrees of Insanity? By R. M. Phelps, M. D.
[Reprinted from the *Northwestern Lancet*.]

Abscess of the Antrum of Highmore, with Cases and their Treatment. By E. Harrison Griffin, M. D. [Reprinted from the *Medical Record*.]

The Pretubercular and Prebacillary Stages of Consumption. A Consideration of the Early Diagnostic Signs of Pulmonary Tuberculosis—A Plea for the Recognition of Premonitory Symptoms. By Charles Manly, M. D. (Read before the Colorado State Medical Society.)

The Influence of Diseases of the Nose and Nasopharynx on Other Parts of the Body. By W. Scheppegegrell, M. D. [Reprinted from the *New Orleans Medical and Surgical Journal*.]

Appendicitis; a Timely Operation. By Howard Crutcher, M. D. Reprinted from the *Medical Current*.

Spasmodic Laughter and Weeping. By Hugh T. Patrick, M. D. [Reprinted from the *Chicago Medical Recorder*.]

The Complicating Conditions, Associated Diseases, and Mortality Rate in Erysipelas. By J. M. Anders, M. D. [Reprinted from the *International Medical Magazine*.]

Spindle-cell Sarcoma and Epithelioma, a Report of Cases.
By W. Blair Stewart, M. D. [Reprinted from the *American
Medical Association Bulletin*.]

Arsenite of Copper as an Antispasmodic. By W. Blair Stewart, M. D. [Reprinted from the *American Therapist*.]

Piperazina and Other Eliminants in the Treatment and Prevention of Gout. By E. D. Mapother, M. D., London. [Reprinted from the *Proceedings*.]

ON THE RELATIONS OF SOME COMPOSITIONS TO PYROLYSIS. II.
SIMON SHOLL, F. R. C. S. Ed. (Reprinted from the *Quarterly
Medical Journal*.)

Chickens and Preventive Immunization in Turkey. *Int. J. San. Hyg. Mapp.* 1: 1. Massey, M. B. [Hygienic Uses of the Antigen *Modified Chumney*.]

The Unnatural Abuse of Women in the Transsexual Slave Process. By Isidore Dyer, M. D., New Orleans. [Reprinted from the *Medical News*.]

The Proceedings of the 10th Annual Meeting of the American Society for the Advancement of the Science of the Mind, held at the University of California, San Diego, from the 1st to the 4th of December, 1964.

Some Meteorological Data. By Samuel A. Fisk, M. D., Denver, Colo. (Reprinted from the *Western Medical and Surgical Journal*.)

YOUNG PEOPLE'S PERCEPTIONS OF SEXUALITY. By Edward
Hartman, M.D. (Reprinted from the *Journal of Sex Research*,
ent. Bulletin.)

The Physiological Action of Alcohol. By JAMES CLARK M. D. (Translated from the *Façonisme* by J. C. M.)

Department of Psychology, University of Illinois at Chicago, 4400 S. Maryland Ave., Chicago, IL 60607, U.S.A. (e-mail: shirley@uic.edu).

Ueber die Behandlung der Placenta praevia mittels intrauterine Kolpeuryse. Von A. Duhrssen. (Sonderabdruck aus der Monatsschrift für Geburtshilfe und Gynäkologie, Bd. 11, 1881, S. 1-10.)

Kaiserschnitt, tiefe Cervixincisionen und mechanische Dilatation des Muttermundes. Von Dr. Dubrssen. [Sonderabdruck aus der *Berliner klinischen Wochenschrift*.]

Ueber die operative Heilung der mobilen und fixirten Retroflexio uteri auf vaginalem Wege mit besonderer Berücksichtigung der Dauererfolge. Von Dr. Duhrssen. [Sonderabdruck aus dem *Archiv für Gynäkologie*.]

Ueber eine neue Methode der Laparotomie (vaginale Coeliotomie). Von Dr. Duhresen. [Sonderabdruck aus der *Berliner Medizinischen Wochenschrift*.]

Ueber aufsteigende Degeneration nach totaler Quetschung
des Rückenmarkes. Von Hugh T. Patrick, M. D. [Sonderab-
druck aus dem *Archiv f. Psychiatrie u. Nervenkrankheiten.*]

Neue Beiträge zur operativen Behandlung der Magenerweiterung. Von Dr. Med. Heinrich Bircher. [Separatabdruck aus der *Correspondenz-Blatt f. schweiz. Ärzte.*]

Ueber eine neue Heilmethode der Harnleiterscheidenfisteln
nebst Bemerkungen über die Heilung der übrigen Harnleiter-
fisteln. Von Dr. Duhrssen. [Sonderabdruck aus der *Sammlung
klinischer Vorträge.*]

Vibratory Medicine. By Hugh T. Patrick, M. D. [Reprinted from the *Chicago Medical Recorder*.]

Miscellany.

The Late Dr. Oliver Wendell Holmes.—The *British Medical Journal* for October 27th contains the following letter from Dr. W. T. Gairdner:

"MY DEAR EDITOR: I have read with full appreciation your notes of an interview last year with dear old Oliver Wendell Holmes, and am at once glad and proud (as any of us may well be) to find myself lovingly remembered as one of his old friends on this side of the Atlantic; but it is only right to make one correction. It is certainly not the case, and could not possibly, I think, have been intended to be conveyed to you that Dr. Holmes met me in Paris in the days of Louis Philippe, for at the time referred to I was more likely to have been puzzling over the multiplication table and vulgar fractions, or over only Louis the First, as he called them then, the small ones, studying typhoid fever, under Louis at La Pitié. There was a Dr. Jackson, Jr., who was a well-known pupil of Louis at that time, and after and quite recently, I have been in the habit of slipping into your notes in this relation alongside of his, but I shall not do that now."

correspondence with Oliver Wendell Holmes may possibly interest your readers; and certainly there is nothing in it which can do aught but add to the feelings of affectionate admiration with which the members of the entire Council possess the privilege of reading your correspondence.

The real dose, I said, had to be administered with every War Day (Friday) from 1961. So the Government proceeded with the program. They will be asked to do so by Congress, and the House of Representatives will, by a strong majority, pass a bill which would require the use of DDT. The program was, however, stopped. Because at the time, a young congressman with a high and well-known name, had introduced a resolution to stop the Government from doing so. I said this was a very serious matter, and I said that I would be glad to see the Government do so. I said that I would be glad to see the Government do so. I said that I would be glad to see the Government do so.

others in a review, which I can read even now without any sense of its being overstrained, although pervaded in every line by the feelings of deep respect and gratitude excited by the perusal of this work of an evidently venerable, but to me little known, author.* Certainly, the last thing that ever could have entered my mind in penning this anonymous tribute was that it would bring me into friendly, even affectionate, relations with one who, if not quite indisputably first of American humorists, is at all events inferior to none in the unique character and high spiritual quality of his humor.

Oliver Wendell Holmes was at this time a man in middle life, and had become very closely connected by marriage with Dr. Jackson. How it was discovered that I wrote the review in question I do not now remember; but the next post brought me a letter of acknowledgment from Dr. Jackson, and the immediately succeeding one a photograph of the old man, sent to me with his signature and with a delightful letter from Dr. Oliver Wendell Holmes, who revealed to me in it the warm affection and almost unqualified admiration inspired throughout the profession in America by the character of the senior. That portrait of Dr. Jackson is now in my retiring room at the university.

His son, James Jackson, Jr., had been previously known to me by reputation as a follower of Louis, and as one who had died too early to have established a fame such as might have been anticipated from his communications to the Society of Medical Observation in Paris. He was, I believe, well known to the late Dr. Walshe.

In 1891 *Another Letter to a Young Physician* was published by Dr. Jackson, Sr., with some further medical papers, including an important one on the last illness and death of Washington.

But my intercourse and correspondence with the older man may be said to have been wholly taken up and absorbed by Oliver Wendell Holmes, with whom, to my great satisfaction and advantage, I have ever since continued to correspond from time to time, the last letter received from him being certainly not without reference to his death.

Even at the above-mentioned date of my first letter from him, the name of Oliver Wendell Holmes was well known as that of a man of letters, and of one, who was thoroughly loyal to his profession while cultivating literature with a rare

I can not now remember what it was in his writings that

He had been living in the city of Lowell, and not even risen, at least on our side of the Atlantic, the literary quality of the humor displayed in the writings of Holmes, and the large grasp of contemporary thought, combined with medical and

interview which you record, quite apart from the apocryphal Paris incident.

For more than a quarter of a century I continued to correspond with Dr. Holmes from time to time without having ever had the chance of seeing him; and when he came to this country in 1886 I was most anxious to have it arranged that he should come to Glasgow and be in the hands of a few friends there for a visit to the Clyde and the land of Burns. The American consul here at this time was Francis H. Underwood, LL. D., a man of fine literary instincts, a personal friend of all the Boston men of eminence, and one of the early contributors to, if not editor of, the *Atlantic Monthly*, a man whose personal popularity in Glasgow would have alone secured the success of such a visit.

But it was not to be. The magnetism of London society and the necessity of coming down to Edinburgh, though but for a single day, in order to receive the degree of LL. D., exhausted all the time that could be devoted to Scotland, and I had to content myself on this occasion with the pleasure of being present at the graduation in Edinburgh, and afterward meeting Dr. Holmes in the evening at the house of Professor Crum Brown.

In the autumn of 1891, however, I went to the United States for the first time, and was, like you, privileged so far as to spend the greater part of a day with Oliver Wendell Holmes at his beautiful summer residence at Beverly Farms.

I did not make any notes of that interview at the time, and have, therefore, not much in detail to say about it; but it was peculiarly delightful to find the dear old man actually awaiting me at the station, full of gentle kindness and astonishing animation; full, also, of beautiful reminiscences and little revelations of his innermost self, which will remain with me, I trust, to the last.

At this time Mrs. Sargent, his widowed daughter, who accompanied him to this country in 1886, was dead, and he lived with his son, the eminent Judge Holmes, referred to in your memoir, who was with us at lunch at Beverly Farms on that occasion. The conversation naturally had a very wide range, and I can not make even an attempt to reproduce it; but it left on my mind the same consistent impression which Oliver Wendell Holmes produced upon every one alike in his works and in his conversation, of a mind rendered cheerful and serene, not to say youthful, even in extreme old age, by a kind of optimism which could only be the result of a well-assured and loving trust in the best and highest spiritual things. In him this element of what may be very properly called 'faith' was so steadily maintained as to keep him easily at a spiritual level far above the small vexations which disturb inferior natures. Some of the memoirs of him lately published seem to me to assume too easily that this happy temper of his was a result merely of his fortunate surroundings. I will venture to indicate, without going into any detail, that this was by no means so. Oliver Wendell Holmes was a happy man to the last, in spite of some very disturbing domestic circumstances (for which no one was to blame), but which in many high-strung natures might have tended to quite the opposite result.

There was a curious similarity in this respect, as in some others, between him and my equally dear friend Dr. John Brown, the well-known author of *Rob and His Friends*; but the temperament of the two men, alike in one thing—lovable—was very different, and the effect of adversity upon them differed accordingly. Both of them, however, will remain, to all eyes, as persons of a most charming and noble character, and I am sure that they will be remembered as the most lovable men of our age, and that our age has profited by their lives.

W. T. GARLAND.

"P. S.—One little incident of the conversation that afternoon is perhaps worthy of being recalled and here set down, because it appeared to me at the time so absolutely characteristic; and there is no one else in a position to recall it. In the course of a long drive in his little open carriage, in which he took me to see some of the noble elm trees of which he had sung the praises in his works, we found ourselves were not far from Salem, the birthplace of Nathaniel Hawthorne, with its terrible memories of witch persecutions in the seventeenth century. I had just been visiting a very old lady (all but a centenarian) well known to him, whose marvellous vitality and restless mental activity contrasted, in a way that almost seemed 'uncanny,' with the bodily frame wasted and decayed to the last possible degree consistent with life. I ventured to say to him: 'It is fortunate that Mrs. — did not live in Salem in the middle of the seventeenth century; for some of your ancestors or their friends would certainly have had her burned for a witch.' He looked me in the face, half seriously and half in jest, and said at once: 'Is she *not* one?' I could not help thinking at the moment of Elsie Venner, with the impossible rattlesnake theory so elaborately worked out through the aid of the 'scientific imagination,' till it seems to the average reader to be gravely propounded as an outcome of the laws of heredity.—W. T. G."

A New Method of Cranio-cerebral Topography in Brachycephalic and Mesaticephalic Children.—At a recent

meeting of the *Congrès français de chirurgie*, a report of which appears in the *Progrès médical* for October 20th, M. Lannelongue and M. Maucclairé presented a paper on this subject in which they remarked that among the numerous methods of craniocerebral topography which sprang up every year we must distinguish between those in which the authors had used absolute lines and given fixed distances on these lines, without regard to the individual variations, and those in which an average line was taken on which a given distance was calculated. After several attempts M. Lannelongue and M. Maucclairé had adopted an average line in order to investigate the inferior guiding marks; they had pursued the study on fifty-two children from two to fourteen years old. Their line of operation was a horizontal apophyso-orbito-supraprotuberantial curved line. It started from the superior external angle of the orbit and from the middle part of the apophysis; it came out behind on the sagittal line above the external occipital protuberance. This curved line was easily traced, according to M. P. Broca, who had advised placing the head in a horizontal position. Some writers, however, had differed with him in this respect, but M. Lannelongue and M. Maucclairé had not been able to follow their method. Of the transverse apophyses was taken as a posterior mark, this time was adopted as the posterior.

The anterior breadth of the mouth measured across the upper lip extended approximately to the corner of the external mouth with the posterior nine tenths of the authors' proportional line. According to these two measured attributes of the Form of the Lando among brachycephalic children was a centimetre and a half, giving the nasal breadth point. In order to measure the median breadth of the lower lip, the point of junction of the external lip with the posterior line 9/10th of the proportional line was to be used, and at this point, a vertical line would have to be drawn. To measure the distance of the base of the third frontal sinuses, the point of junction of the median external lip with the posterior line 9/10th of the proportional line, a vertical line would have to be drawn, and the distance from the top of the median sinus. Order to have subnasal or nasal breadth, a vertical line would be drawn 10 mm. to the right of the point of junction of the posterior line 9/10th of the authors' proportional

with the posterior third of this proportional line, a perpendicular line equal to this third must be raised. At the top, the posterior extremity of the posterior branch of the Sylvian fissure would be found.

In puncturing this horizontal curved line near the external auditory meatus the sphenoidal cornu of the cerebral ventricle is penetrated. The recent operations of cranioplasty enabled us to raise large pieces of the cranium, so that rigorous procedures were not necessary in order to come within about a centimetre of finding any center searched for. Among children these osteoplastic resections (which were of no use unless the lesions were extensive) should be replaced by a less rigorous intervention—that is, by the application of the trephine in one or two places.

The authors had been struck with the variations of length of the lines used. It showed that there existed individual variations which must be taken into consideration, and it showed the fallacy of those procedures in which the guiding marks were represented by absolute figures.

Warts of the Mucous Membrane Coincident with Warts of the Hands.—The *Journal de clinique et de thérapeutique*

infantiles for October 25th publishes an article on this subject by M. G. Variot, who has had under his observation a young boy, nine years old, who presented several typical warts on the fingers of the right hand. The boy's mother drew the author's attention especially to a small protuberance on the buccal mucous membrane nearly a centimetre behind the labial commissure. Its elevation did not exceed three millimetres and its diameter was about a millimetre. This small mass was of a pearl-white color at its extremity, and contrasted sharply with the red color of the surrounding mucous membrane. It terminated in many fine bristles which gave it the appearance of a small cauliflower. The child was somewhat inconvenienced by this protuberance, which he had had for several weeks, and he wished it taken off. The author made a diagnosis of papilloma of the buccal mucous membrane, which, he thought, had been developed in all probability by secondary inoculation of the typical warts on the fingers. The bristle-like aspect of this small tumor and its exact limitation confirmed the diagnosis of papilloma. The author cut it off and cauterized the base with nitrate of silver.

M. Chabry, an *interne* of the *Hopital Herold*, took microscopical sections of the tumor after it had been hardened in alcohol, and on these sections the author had seen many protuberances fringed at the extremity and showing all the characteristics of horny productions analogous to those which are met with in verrucous papilloma. M. Variot thought that the papilloma on the mucous membrane was connected with the warts on the face, and that in this case there had been self-inoculation, since the child had had typical warts on the hands. This fact,

Immediate Surgical Intervention in a Case of Simple Perforating Ulcer of the Stomach

the physicians saw the patient, eight hours after the accident, nothing in his general condition denoted the gravity of the internal lesion. The pulse was 80 and full, the temperature was 100.7. The pharynxes-stomachogastric part, and the colon rectum were retracted and tense, especially at the upper part of the recti muscles.

The author suspected laceration of the stomach or of the intestine, and he urged the necessity of immediate surgical intervention. The operation was performed with the usual precautions. An exploratory incision was made from the xiphoid cartilage to the umbilicus. When the peritoneum was opened wine, altered and mixed with some remains of food, escaped. The incision was enlarged and the liver forcibly raised by an assistant, and deep under the liver, near the vertebral column, about two centimetres from the cardia on the anterior surface of the stomach, the author found the perforation. This was cleansed and disinfected. Then the author tried to suture the edges of the perforation, but the tissues were too friable. As it was out of the question to excise the ulcer, there was nothing to do but to inclose the perforation in the bottom of a fold made on the anterior surface of the stomach; occlusion was assured by a double row of Lambert's sutures very carefully inserted at equal distances. The incision was closed except at the lower part, through which the author passed an iodoformed pledget as far as the sutured ulcer. Very satisfactory results followed. On the eighth day, a slight purid serosity, which very soon became purulent, escaped. The author, fearing to destroy his own work, allowed the fistula to continue for five months without daring to touch it. The patient, however, at first emaciated in spite of all efforts on the part of the physicians, afterward grew stout. In March, 1894, the author incised the fistulous tract and scraped and cleansed the gastro-subhepatic purulent sac. A month later a cure was obtained, and at the time of the report the patient was in a perfect condition.

It had been established, said M. Michaux, that perforation of the stomach is more frequent at the anterior wall than at the posterior wall, and that the ulcer occurred more frequently at the posterior wall and in the pyloric region, perforation was more frequent on the anterior surface. When the ulcer became perforative, three things might be produced: General peritonitis, partial peritonitis, and fistula. The author thought that perforation might be diagnosed. The occurrence of perforation, whether it followed a diagnosed or a concealed ulcer, was always the same thing.

The author then reported a case of perforation of the stomach, which he had observed in the service of M. Michaux. The patient was a man, 40 years of age, who had been suffering from a gastric ulcer for several months. He had been treated with various remedies, but without success. One day, while he was sitting at his work, he suddenly felt a sharp pain in the upper part of his abdomen, which soon became more and more intense. He called for help, and the physician who was on duty at the time examined him. The patient was found to be in a state of collapse, with a rapid pulse and a high temperature. The physician immediately performed a laparotomy, and found a perforation of the anterior wall of the stomach, about two centimetres from the cardia. The perforation was closed with a suture, and the patient recovered.

The Earthworm as a Drug.

In the October number of the *Journal de Médecine*, M. Camille Guérin, of Lyons, reports a case of a patient who had been suffering from a chronic disease of the rectum for several years. The patient had been treated with various remedies, but without success. One day, while he was sitting at his work, he suddenly felt a sharp pain in the upper part of his abdomen, which soon became more and more intense. He called for help, and the physician who was on duty at the time examined him. The patient was found to be in a state of collapse, with a rapid pulse and a high temperature. The physician immediately performed a laparotomy, and found a perforation of the anterior wall of the stomach, about two centimetres from the cardia. The perforation was closed with a suture, and the patient recovered.

He relates that some years ago he went fishing and took with him some earthworms covered with wet mud in a cocoa-nut shell, and that toward evening he returned home with the shell containing the worms, intending to go fishing again the next day. The next morning, to his great surprise, he found that the mud had nearly disappeared from the cocoa-nut shell, and some of the worms had left the shell, while others were still within it buried in a thick, gelatinous-looking mucus. He appears to think that the worms dissolved the mud, and from this he fancies that these worms must possess the property of dissolving urinary deposits. Unfortunately, he goes on to say, he has not had an opportunity of testing his theory, but intends to do so when an occasion arises, and hopes that in the mean time some of his professional brethren will try the plan and report their results. This is how he means to use the worms: After being dug out of the earth the worms are to be kept in a vessel for half an hour—i. e., "till they have digested all the mud they have eaten." Then ten or twelve of them are to be washed with cold water and boiled for half an hour in half a pint of water, so as to make a soup, and the whole of this soup is to be given to the patient at one dose. The author states that the soup ought to be prepared fresh each time, but he does not say how often he thinks the dose ought to be administered. His closing suggestion is that, if the soup is found to be useful, some of the well-known chemists in Europe and America might prepare an extract of the worms, and for such an extract he proposes the term *extractum lumbrici terrestris*.

Vaginal Excision of Non-malignant Stricture of the Rectum.

At the eighth session of the French Congress of Surgery, recently held in Lyons (*Union médicale*, October 25th), M. Campeçon, of Paris, read a paper describing a method of excising non-cancerous strictures of the rectum by way of the vagina. The patient lying on her back, the finger was introduced into the rectum, and then the whole recto-vaginal septum was cut through by transfixion from the fourchette to the anus, making a very large open surface. Then sutures were inserted into each of the vulvo-anal flaps thus formed, and a transverse incision through the intestine was made at the lower border of the stricture, after which the rectum was dissected out from below upward and the whole length of the stricture isolated. The next step was to make a second transverse incision through the rectum at the upper border of the stricture and cut out the strictured portion. Finally the upper part of the rectum was stitched to the lower part, and the sphincter was re-established at once by special points of suture, and the operation was finished like an ordinary perineorrhaphy. A patient on whom the author had operated by this method had recovered completely and had perfect control of the sphincter.

Erysipelas as a Curative Agent in the Paraplegia of Pott's Disease.

In a report of the proceedings of the French Congress of Surgery recently held in Lyons, published in the *Journal des praticiens* for October 27th, there is an account of a case observed by M. Loison, in M. Poncet's service, of a young girl who for three years had had kyphosis of the dorsal region due to Pott's disease, also a slough over the sacrum. She was treated by the application of a Bonnet's splint, when an extensive outbreak of erysipelas attacked her, followed by three abscesses.

After this she recovered the power of moving her legs. There was a second attack of erysipelas, and this was followed by additional improvement. After a third attack of erysipelas, she recovered, and so much better that she could walk, also her legs were mentioned by means of a corset. The improvement was temporary, however, and at the time of the report the woman was able to do hard work. The author said that he considered this case not only as a clinical

perments is to set not only the medical profession, but the world at large, in opposition to us, and so to impair our own power in many departments of our work in which it should be our highest aim to form the public mind and create a public sentiment. It is therefore from a sense of duty that I suppress my personal feeling in the expression of the hope that the Congress may not consider it necessary to pronounce an indiscriminate condemnation on all forms of vivisection.

"On the other hand, I sincerely trust that the congress may speak with energy in denunciation of the wanton and willful cruelties which are daily perpetrated in the name of science. I consider it the duty of all who are devoted to the protection of animals to denounce in unequivocal terms a multitude of atrocities for which there is no excuse.

"It is an inexcusable atrocity to subject any animal to pain which can be prevented by a conscientious use of anæsthetics.

"It is an inexcusable atrocity to perform painful operations upon animals merely for the purposes of demonstration to classes of medical students. The results of such experiments are well known. To repeat them is an unnecessary and gratuitous cruelty.

"It is an inexcusable atrocity to permit medical students and mere laymen to repeat painful physiological experiments which have already been performed, and needlessly performed, many thousands of times.

"I might greatly enlarge this list, but I would submit to the congress this important point, that, by confining our objections to such wanton and gratuitous cruelties as these, we may hope to secure the support of right-minded members of the medical profession. The moderation of our own society in this particular has won for it the approbation of many medical men; and, if the medical faculty itself could be won to share our feelings in this matter, we should gain an influence for the protection of our dumb clients which is to be gained in no other way."

A Tribute to a Lady Physician.—Dr. William S. Cheesman, of Auburn, N. Y., sends us the following:

" Amanda Sanford was born in Rhode Island in 1838. When seven years of age she came with her widowed mother to Sepioville, in Cayuga County, N. Y. In later years, when speaking of this time, she said to a friend, ' I am glad I was poor.' Her education was obtained at the Friends' Academy in Union Springs. After graduation, in order to recover her health, which had suffered from school work, and to earn money for the furtherance of her plans to study medicine, she started a vegetable garden, the while applying herself to Greek as a diversion. At the end of a year, with a hundred dollars in pocket and restored in strength, she began teaching at the Hawland School in Union Springs and reading medicine by herself. In two or three years she was able to enter the Woman's Medical College at New York. After graduating there she spent a couple of years in the New England Hospital in Boston, and in Massachusetts in 1863 went to San Anjos, Mex. where she was graduated in the following spring with the first honors, the only woman in a class of ninety. In 1872 she settled in An-

the gifts of silence, deliberation, and perseverance. But, though self-reliant and self-contained, as all strong natures are, she won the affection as well as the esteem of those with whom she came in contact. The gratitude of patients, poor as well as rich, and the warm attachment of persons of varied temperaments attest the charm and unselfish devotion, as well as the power, of her personality; while the thoroughgoing confidence and respect of her colleagues rewarded the honor and magnanimity of her professional relations. In her calling she possessed courage and skill, operating with success in cases of varied intra-abdominal disease. It was, however, as the trusted family physician, friend, and counselor that her gifts and character best expressed themselves. Many mourn for her as for an ideal and an inspiration lost.

"Dr. Hickey died on October 17, 1894, of pneumonia contracted, it is supposed, by chill after assisting at a tedious abdominal operation in an overheated room. Death did not take her unawares. Her intuition was, even in her own case, not at fault, for she foresaw the danger while yet distant, and with characteristic calm made dispositions for the future. In accordance with her wish, her body was committed back to earth in the village cemetery at Scipioville, where her life of study and labor and high usefulness in this vicinity had its beginning."

Unconscious Delivery.—The *Medical Reporter*, of Calcutta, credits the following to the *British Medical Journal*: “Le Blond (*Jour. de méd. de Paris*) related in July a remarkable case before the Medico-legal Society of Paris. A woman, aged twenty-seven, who had been seduced and deserted, was seized with slight colicky pains, but continued to work. In the course of the following night she was attacked with still more severe pain. Thinking that an action of the bowels would give relief, she sat upon her chamber utensil; on straining, a live child was born. This alarmed her greatly, but she cut the cord with scissors, wrapped the infant in a cloth, and walked downstairs, telling the people in the house, in fear and trembling, what had happened. Violent flooding set in. The cord had not been tied. Early in the morning Le Blond saw the patient, and found the placenta still in the vagina. He extracted it. The mother and child did very well. Had the child died the mother would have been very strongly suspected of murder, especially if she had attempted to defecate in a public privy, in which case the child would almost inevitably have been killed.”

A Death from the A.-C.-E. Mixture.—On the 6th inst. Dr. R. Stansbury Sutton had a death occur from the administration of the A.-C.-E. mixture. The patient, a woman, forty-four years of age, with a bleeding fibroid, was being anesthetized in her bed, outside of the operating room. The anæsthetic was given by an experienced assistant; it was given through an open cone the top of which was filled with absorbent cotton. The entire amount of anæsthetic given was six drachms, of which four were probably inhaled. The patient was a large, fleshy, and anæmic subject. Prior to the administration of the anæsthetic, she was given an eighth of a grain of morphine hypodermically. Ten days before this, Dr. Sutton had given her an anæsthetic (sulphuric ether) for an examination, and no trouble had resulted upon that occasion. Her heart was examined prior to the administration of the anæsthetic on each occasion, and no organic lesion was detected. The time from the moment she began taking the A.-C.-E. mixture until she was dead did not exceed fifteen minutes. The patient was injected with a solution of atropine, and the tongue and the trachea were fitted out and kept out. The lungs and sinuses were injected with ether, and the trachea was washed free, and while the patient was lying the trachea was cut, and was pronounced dead.

Lectures and Addresses.

CARIES OF THE SPINE

FOLLOWED BY COMPRESSION OF THE CORD.

BY J. T. LEBRIDGE, M.D.

PROFESSOR OF SURGERY AND MEDICAL JURISPRUDENCE, AND
IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF
SCHOOL OF THE CITY OF NEW YORK.

LECTURE II.

COMPRESSION of the spinal cord may result from any morbid process that gives rise to narrowing of the spinal canal to a sufficient extent to encroach upon the space actually occupied by the cord. The chief cause is an affection of the bones of the spinal column, especially from caries and traumatism. Growths of the bones or of the membranes, aneurysms eroding the bones and extending into the spinal canal, and thickening of the dura, may compress the cord. Most of the causes mentioned directly affect the cord only one or two inches in its vertical extent, but sometimes we find an exception when the compression is due to pachymeningitis with considerable thickening of the dura. Under such circumstances the cord space may be encroached upon several inches in its longitudinal axis. The character of the symptoms depends largely upon the degree of the compression and the rapidity with which it is developed, regardless of what may be the morbid process by which the compression is exerted; but my remarks to-day will be limited mainly to compression of the spinal cord from caries of the spine, and its usual concomitant, thickening of the dura.

The functions of the cord are disturbed by compression and the resulting inflammation.

From a knowledge of the pathological changes that take place in compression of the cord, the symptoms are readily appreciated. These consist in narrowing of the cord at the seat of compression, change in color and consistence of the cord substance, thickening of the walls of the blood-vessels, increase of interstitial tissue and destruction of nerve fibers. The narrowing includes one or two inches of the vertical extent of the cord. Sometimes the cord at the seat of compression is cylindrical, sometimes flattened, and at others it is irregularly constricted, thus accounting for the irregularity of the compression of one system of fibers and the usually damaged and at times other may escape. The size of the cord is often reduced to one half or even one third of the normal. In some cases, however, although the function of the cord is greatly impaired, the size at the seat of compression is but little less than that of normal. The affected portion is grayish, and the altered difference between the white and gray matter is lost. Increased vascularity, increased size of the cord to some extent, but in those where the compression is rapid, gradual, and so the degree of all cellular degeneration is increased by the compression

of interstitial tissue and the degeneration of nerve fibers. The change in color and consistence of the cord is due to inflammation, and not directly to the compression. The inflammation is not limited to the seat of compression, but it extends some distance above and below it. From the diseased portion of the cord ascending and descending degeneration takes place. In all cases great compression is attended with considerable inflammation, but slight compression, which usually gives rise to a mild form of inflammation, may set up severe myelitis. The rapidity with which the inflammation of the cord is developed is usually modified by the slow or rapid increase of pressure. Suddenly developed pressure always causes acute myelitis, and gradual increase of pressure, as a rule, gives rise to chronic inflammation, but in some instances subacute, or even acute, myelitis may result from gradually developed pressure. The microscopic appearances are those of myelitis, with increase of interstitial tissue and degeneration of nerve elements. In the early stage various cell formations take place, but later these may in part, if not entirely, be replaced by a reticulum of interstitial tissue. The nerve elements become inflamed and undergo degeneration, and "masses of myelin, granule corpuscles, and corpora amylacea" are seen. In a few instances all the nerve fibers at the seat of greatest compression are destroyed beyond any possibility of recovery; but fortunately such cases are comparatively rare. In the majority of instances, a large proportion of these fibers persist with narrowed medullary substance, and are capable of regaining, imperfectly it may be, their power of conduction, although surrounded by a great increase of interstitial tissue. The walls of the blood-vessels are thickened, and in some portions the caliber of a vessel may be found obliterated. The intensity of the inflammation gradually lessens the farther we go from the seat of compression, but ascending and descending degeneration of the destroyed nerve fibers takes place throughout their course in the cord. The cornua of the cord suffer, the ganglion cells degenerate more or less completely, and functionless interstitial tissue takes their place. The nerve roots that pass through the affected part are crippled by the pressure, and are further influenced by the inflammatory process. They become inflamed, interstitial tissue increases, and the nerve elements degenerate.

The symptoms of compression of the cord are modified by numerous and varying conditions, and those occurring incidentally with the initial process of the compression are modified by the nerve root hyperplasia that it will be necessary to refer to this matter although well understood that in some instances the nerve roots are increased in size in addition to the compression and the process of initial of the spine. The involvement of the nerve roots abolishes the increase in size with the initial process. The spinal cord is often found to be greatly affected and the spinal ganglia which surround the spinal roots are increased in size. The initial stage is dependent upon the nature of the disease. The process may be acute or chronic and may be in the nature of a tumor, or it may be in the nature of a growth, or it may be in the nature of a tumor. When in the latter the process is after the growth

when the lumbar enlargement is affected. Cystitis is not troublesome if the bladder receives proper attention, unless the lumbar portion of the cord is seriously damaged.

When the morbid process is situated in the cervical enlargement, the arms are affected as well as the legs. In the cases in which the paralysis and muscular wasting in the arms are due to pressure on the nerve roots, the arms are paralyzed before the legs; but if the paralysis is due to pressure on the cord, the legs may be paralyzed before the arms. The cervical muscles may be weakened so that it becomes difficult for the patient to support the head erect. All the superficial reflexes below are exaggerated early in the disease, and myotatic irritability in the legs is excessive and ankle clonus is pronounced. In severe lesions the patient loses control of the bladder. Anæsthesia, more or less marked, is present in the parts below the cord lesion. The arms, upper portion of the chest, and sometimes the cervical and occipital regions, are the seats of pain. Cardiac and respiratory involvement take place when the lesion is high up in the cervical region. The intercostal muscles are paralyzed, and if the diaphragm is seriously affected death takes place from respiratory paralysis. Any pulmonary affection is grave in compression in the cervical region of the cord—even a chronic bronchitis may prove fatal. The pupils and the vaso-motor apparatus do not become affected unless the sympathetic nerves or ganglia are affected. As a rule, there is no tendency to bedsores. Contractures of the leg muscles occur. If the dorsal region is the seat of compression, the arms, the heart, and respiration escape except in lesion of the upper portion, when the intercostal muscles may be paralyzed and the arms become secondarily affected from the extension of inflammation. The disturbances in motion, sensation, and in the reflexes in the parts below are the same as in lesions of the cervical region, with the possible exception that pains are often felt in the legs in compression of the dorsal portion of the cord. When the lumbar enlargement is compressed or becomes involved by extension of inflammation, paralysis of the bladder and bowel, with the tendency to the formation of bedsores, abolition of the knee jerks, flaccidity and great wasting of the paraspinal muscles, place.

Diagnosis.—The diagnosis of compression of the cord due to cancer of the vertebra depends upon the evidence of bone disease, namely, pain and deformity. In such cases other causes of compression should be carefully excluded. The first point to determine is a case affecting such symptoms is whether the symptoms are due to some pressure on the cord or to direct cancer. After ascertaining that the cord is compressed, we should endeavor to find the source of compression. The chief diagnostic symptoms of compression of the cord are the indications of irritations of the nerve roots, such as pains radiating from the spine, in the arms toward the hands, pain in the groins, and in the legs depending upon the position of the morbid process. The evidence of bone disease, such as localized pain and localized tenderness of the spine; and disturbances in the functions of the cord, as motor impairment, sensory changes and alterations of the reflexes, especially increased plantar reflexes,

in the parts below the seat of the spinal lesion. The affections with which compression of the cord is most likely to be confounded are transverse myelitis, medullary tumor, hæmorrhage in the substance of the cord, and syringomyelia. In primary transverse myelitis there are neither nerve root nor bone symptoms, and in those cases of chronic myelitis attended with nerve root symptoms the latter are secondary to disturbance in the cord. A medullary growth may give rise to prominent nerve root symptoms, which are often unilateral at first, but no bone symptoms are present until late. Besides, trophic disturbance is usually much more prominent in medullary growths than in compression, and evidences of growths in other parts of the body are frequently present in tumor of the cord. The history of sudden onset and the absence of nerve-root and bone symptoms are sufficient to prevent mistaking hæmorrhage in the cord substance for compression. Siringomyelia is a condition in which the cord substance is compressed from within outward instead of from without inward, and presents some symptoms in common with the ordinary form of compression of the cord; but the absence of temperature and pain senses, while tactile sense remains fairly good, the absence of bone and definite nerve-root symptoms, with the prolonged duration of the disease, make the symptoms of syringomyelia quite distinct from those of the condition under consideration.

Having satisfied ourselves that the cord is compressed, our next duty is to ascertain the nature of the cause of compression. Is it due to meningitis, especially chronic internal pachymeningitis, to tumor in the spinal canal or bone, to an eroding aneurysm, or to caries? In myelitis secondary to pachymeningitis the nerve-root symptoms extend over a much greater vertical area of the body than in compression due to bone disease. Bone symptoms are absent, and a cause of the meningitis can usually be traced. A tumor in the spinal canal gives rise to no bone symptoms until late; unilateral nerve-root symptoms are common and do not become bilateral until cord symptoms develop; therefore, compression of the cord manifesting itself after bilateral root symptoms would in all probability not be due to a tumor in the spinal canal. A tumor in the bone, like a growth in the canal, is usually found secondary to growths in other portions of the body, except in cases of injury to the vertebra. Compression of the cord in a tumor and pachymeningitis would be more common in the lower part. Nerve-root symptoms are more common in the lower part of the cord.

Compression of the cord in a tumor and pachymeningitis is greater in cases of tumor than in caries. The presence of eroding processes could be detected by a sensitive radiometer. Points to be determined in the cause of the compression are, the usual nerve-root and bone symptoms, the path of the pain, sensory and motor impairment, and the evidence of bone disease, such as localized pain and localized tenderness of the spine.

The next step is to find the cause of the compression. The cause may be a tumor, an aneurysm, or caries. The evidence of bone disease, such as localized pain and localized tenderness of the spine; and disturbances in the functions of the cord, as motor impairment, sensory changes and alterations of the reflexes, especially increased plantar reflexes,

much destruction of bone has taken place or the functions of the cord have been seriously damaged. In the suppurative stage of caries, or when absolute motor paralysis, with anæsthesia, has occurred, the cautery, if used at all, must be employed lightly, and care should be taken not to form an open sore in the anæsthetic area, lest a troublesome and exhaustive bed sore be the untoward result. While the plaster cast is an excellent aid in the treatment of caries of the spine, it does not seem safe to allow a person to trust to this for support so long as decided inflammation exists in the bones. The same care and vigilance necessary in the treatment of myelitis in guarding against bedsores, cystitis, and kidney complications are demanded in compression of the cord. After the bone disease has been arrested, which is the first object to be achieved in cord disease from caries, the remainder of the treatment consists in endeavoring to prevent a relapse of the bone trouble, and in dealing with the nervous affection as one of subacute or chronic myelitis. The former object is attained by means of the plaster jacket for a year or more, maintaining the best possible health of the patient, and preventing injuries to the spine from various causes. The latter is aided by preventing contractures, employing massage and electricity, and guarding against complications.

Original Communications.

STRABISMUS, OR CROSSED EYES.

HOW SHALL WE TREAT THEM?*

By FRANCIS WALK, M.D.,

PROFESSOR OF DISEASES OF THE EYE, NEW YORK OPHTHALMOLOGICAL SOCIETY.

ALL physicians may at times be called upon for an opinion in reference to the convergence of the eyes of their little patients, so I have thought that the suggestions of this paper may be of service to the society; and since the discussions of the profession in reference to squint are according to my observations, somewhat uncertain and misleading, I therefore wish, if possible, to correct them from my own clinical experience.

The thoughts contained in this paper were most forcibly suggested to me by the following quotation from Dr. W. E. Johnson's excellent article on Amblyopia from September of the *Visual Acuity*, which paper was read before the American Ophthalmological Society in the summer of 1893:

Dr. Johnson says: "The natural tendency of the visual centers is to converge the center of the diplopic image to an offending condition, and relief is obtained by a gradual loss of physiological sensitivity through gradual extension of the vision at one of the eyes. The selected eye may or may not have a muscular abnormal condition due to a greater refractive error than the fellow eye, such as, however,

generally having a hypermetropia of a greater or lesser degree, which is almost always present, and is undoubtedly an important ætiological factor in the production of convergent squint."

I have reported his words thus fully, as I find here two very interesting questions to answer: First, Is there, as a rule, loss of physiological sensibility through psychical exclusion of the vision? and secondly, Is hypermetropia an important factor in the causation of squint?

In discussing this subject I wish to present some views of my own in relation to crossed eyes from my observations both in private and clinical work; not that they may differ very materially from those previously accepted, but that I may separate the cases of convergent squint, when there is no paresis of the external muscular apparatus, into two great classes—operative or non-operative. In these two divisions we may place all the cases that come under our care and treatment, thereby deciding the relative value of glasses or of an operation.

There seems to be an impression among the profession that the vision of amblyopic eyes can be restored with binocular fixation under certain conditions. And the question arises, Is this true in all cases, or only in a certain number, or under certain conditions of refraction? It seems to me that if this fact can be established in any one case, then it should hold good in all. In answering this we shall also find the answer to the quotation above stated.

Fuchs, in the last edition of his work, gives the ætiology of squint as follows: "Strabismus is, therefore, the result of the combined action of two factors—diminution of the visual power of one of the eyes and a pre-existing disturbance of the muscular equilibrium. According as the latter factor consists in a preponderance of the internal or the external ocular muscles, a convergent or divergent squint is produced." The same ideas have been advanced by Stilling and also by Swan Burnett, and these I propose to follow in a certain measure to be explained.

Leaving out, then, all pathological conditions and considering these questions as they relate to squint *per se*, as usually seen in the office and at the clinics, let us define the conditions as indicated in our cases.

I would first define amblyopia as an unknown condition occurring generally in the non deviated or hyperopic eye, in which, without any visible condition of an abnormal condition, there will be a want of power in the visual elements, either existing in the nerve fibers or its terminal elements in the retina, and by which they can not appreciate small images formed on the bottom and thence be conveyed to the brain.

Consequently, there will be, first, the diplopic double image, distorted (double) condition due to refractive error, and in these particular conditions of the cross, but that the amblyopia is concerned. Why this condition is altered, stated, should never say by the one eye and not by the other I am unable to explain. It is usually noticed from one of the other hand, they are both conditions of working visual apparatus in both eyes, but that the sense of light may not be found by the same way in the same manner. Hence, and by this condition the attention of sensitive

* Read before the Medical Society of the County of New York, May 30, 1894.

more powerful muscle—the internal rectus—has overcome its antagonist and remains in a condition of tonic contraction, thereby turning the eye inward, or outward, should the preponderance of power be in the external rectus. Since writing the paper I have examined some cases of amblyopia without squint, and have found the externi strongest or equal to the interni.

If we continue the history of our cases still further, the eye turning inward, the internal rectus remains contracted until about the twenty-fifth year, when the convergence disappears. Why? Because the power of the interni has now become so reduced from continued contraction that it equals that of the externi, and the eye resumes its proper position. Now the amblyopic eye will follow its fellow-eye, but the vision remains the same as in childhood. We may, then, conclude that those cases under our first class are born with an amblyopic eye, and that the normal power of the internal rectus, deprived of the psychical stimulation of the guiding sensation, is the primal and chief cause of the strabismus. These cases can not be corrected by the use of any glasses, but must be operated upon by a complete tenotomy just as soon as the eyes can be tested in reference to their visual power. Until an operation has been performed, glasses or exclusion of the eye will be simply useless; but after the operation the glasses may be used to relieve any strain on the accommodation. The hyperopia was not a factor in the causation of this class of strabismus.

Let me now illustrate our second class of cases. We find a child born with normal eyes, both in reference to vision and the power of the straight muscles, but having a hyperopia of two to four dioptries, with possibly weak accommodation. Now, we soon notice that as it begins to play with small toys or use the eyes at the near point, it begins to turn one eye inward at times, called periodic squint. This continues until the child is five or ten years old, when the eye remains constantly turned inward, called fixed squint.

Now, on testing, we find a loss of visual power in the retinal elements, so a loss of "physiological sensibility through psychical exclusion." The vision is naturally diminished in one eye from disuse, the so called amblyopia ex anopsia, simply from suppression of the visual images in the visual centers. But not amblyopic, because the retinal sensibility still exists and can be readily restored by turning the squinting eye to be used by stopping the relative action of accommodation and convergence by atropine and correcting the refractive error by glasses.

We have here, under these conditions, what Harkness first called relative hypermetropia; so let us see how we may explain it more fully.

We have said that the centers for accommodation and convergence are very closely associated in the oculomotor centers, beneath the aqueduct of Sylvius and the floor of the fourth ventricle, just as the child begins to use the eyes to accommodate, the accommodation and convergence centers are stimulated, it may be said, to converge, by the accommodation. The stimulation for this condition is conveyed to the posterior part of the brain, stimulating the posterior

genae by the association of these centers, and by an excessive convergence the child soon learns to see clearly at the distance of twelve inches. In other words, by a convergence of the visual lines to a point six inches distant, the child attains sufficient accommodation to see clearly at twelve inches, and the rays of light from the object will form a clear image in the retina of the fixing eye. Its fellow-eye is now found to have its visual line directed to a point much nearer than the object or squints inward.

Assuming, and in fact knowing, this to be the condition present, what becomes of the images formed on the retina of the squinting eye? First, the image of the object falls upon the least sensitive parts of the retina—namely, the inner peripheral part, there forming an indistinct image; secondly, the image, whatever it may be, that is formed at the macula, or most sensitive part of the retina, is not in focus, the rays coming from a far different plane than the object, and again we have an indistinct image.

Consequently the visual centers will readily suppress these indistinct images formed on the retina, and only single distinct vision is carried to the visual centers. We may now say there is a loss of vision from "physiological sensibility through psychical exclusion" in the squinting eye, but we must remember that the sensitive retinal elements are still the same and may be rapidly developed to their former standard at birth as soon as the eye is again used under proper conditions.

Is this condition amblyopia ex anopsia, or is it only temporary suppression of the visual image?

Test these cases, when first seen, after they have suppressed the image in the squinting eye for several years, and we will find the vision very much reduced—about $\frac{2}{3}$, or less. Now use a mydriatic, as atropine, to complete paralysis of the ciliary muscle, correct the existing error of refraction, and in a few weeks we will soon find a return of the previous normal power to see and the vision becomes $\frac{2}{3}$, or normal. We have corrected the relative hyperopia, the "guiding sensation" reasserts itself, the squint has disappeared.

The normal muscle balance remains, and in time, should the accommodation power become stronger by the use of glasses, they may be laid aside without a return of the convergence, and the squinting eye will soon be turned to meet the light.

Under these conditions I find we can place all our cases of strabismus, starting in the peripheral conditions in the first class, and by that we can explain all our early phenomena that is observed.

It is well known that persons are born with amblyopia and yet do not squint, and I find that the eyes are fixed on the object; they have no difficulty in converging, and do not turn inward, but the child is born with a loss of vision. Now, the visual power remains the same through life, and they do not squint, because, in their mind I believe, they have an indifference of the power of the visual centers, so it is not really corrected, and the normal power of the visual centers, instead of being stimulated, is in a measure suppressed, and with it

loss of the guiding sensation, to turn inward in the direction of the powerful muscle acting against its weaker antagonist.

In conclusion, if we accept these views we may decide that in the first class amblyopia is simply and positively the cause of the convergence of the visual axis and not a consequence of that condition; the lesion is ocular and not central, nor can it be restored. That in relative hyperopia we may have a temporary suppression of the visual image, not the so-called *amblyopia ex anopsia*, and that we may order our treatment of all our cases from a standpoint that will at once be indicated for the correction of this deformity of the position of the eyes.

We will not please ourselves with the idea that we have restored useful, perfect vision in an amblyopic eye, but that in the first class we have corrected a cosmetic deformity by an operation, and in the second class we have restored a dormant physiological sensibility of the retina by the use of atropine and glasses.

I will not detain you with a report of my cases, both in clinical and private practice, that I have observed in the past few years, particularly since I have noted the discussions of the restoration of vision in amblyopic eyes in the medical journals; but I wish to state that a careful study of all my cases and of those reported, when the histories have been at all accurate and complete, have only tended to convince me that the suggestions contained in this paper are correct and will bear the closest investigations.

The other evening I was asked by a member of this society when I would operate in a case of strabismus convergens? and I would answer that question simply by stating, first decide to which class the case belongs. If to the first class, then operate at any time—at five years of age is the best—while if to the second class, then you must use the atropine and glasses even at two years of age, as reported by Savage, and you may correct the convergence without an operation in the majority of cases. But this means failing, then you must operate after a fair trial of the glasses for six months. I do not believe we shall ever have a divergence after a careful operation in the first class, while after an operation in the second class, by so altering the normal balance of power, we may have that untoward result, and the operated eye turning the other way.

In presenting these views I do not wish it to be understood that there may not be other causes for the production of strabismus convergens, but we never place under the same category of disease every case of the kind, but all cases that present any pathological conditions in the dioptric apparatus, the retina or vitreous, for in all these cases we may say the normal balance of the visual system is broken, and the cause of the faulty sensation that produces and exists in amblyopia.

AN INTERESTING CASE OF ECTOPIC GESTATION.

OF TWELVE MONTHS' DURATION AND WITHOUT
RUPTURE OF THE SAC.*

(It occurring in the presence of Dr. G. K. Dickinson, Christ Hospital,
Jensen City, N. J.)

By JOSEPH M. RECTOR, B. A., M. D.

Cases of ectopic pregnancy are often brought to the notice of the medical profession varying in duration of time from several weeks to as many months; but not so frequently do we receive reports in which the gestation has advanced to its full natural period of time, and the termination of the pregnancy becomes necessary because of the constantly increasing pathological symptoms.

The Fallopian tubes, with their peritoneal, muscular, and mucous coats, lined throughout with columnar and ciliated epithelium, serve their purpose in the economy of Nature by conveying the semen of the male to the ovary and carrying the ovule of the female to the uterus; it is in the existence of their many inflammatory affections, their abnormal new growths within and the pressure of tumors from without, that interference with their physiological function occurs and renders pathological conditions possible. Disease desquamating the mucous coat of its ciliated epithelium places the surface of the tubes in a condition exactly similar to that of the uterus. Lawson Tait also says: "The function of the ciliated lining of the Fallopian tubes is to prevent the spermatozoa entering them and to facilitate the progress of the ovum into the proper nest." With such views one can readily see that the spermatozooids would reach the ovum, which has now become stationary in the tube, impregnation would follow, and adhesion to the tube wall be as possible there as in the cavity of the uterus.

As regards the general course of ectopic pregnancy, authorities mostly agree, and it is only in the classification of the varieties and the length of time to which such different conditions exist that discussion and argument are invited; but having adopted Tait's views relative to the physiological process of impregnation and the normal situation for the fertilization of the ovum, I also accept his views in the classification of the varieties of ectopic gestation—viz., that all cases at first are tubal, and such varieties as are met with are caused from this by a primary rupture.

If I may be allowed again to cite Dr. Tait: "Ectopic gestation in the free portion of the tube infallibly involves rupture at some part of its progress before the fourteenth week, in fact, I may say the twelfth week, for out of an enormous number of specimens I have examined, I have entirely failed to satisfy myself that rupture had been delayed later than the twelfth week, and I have seen it as early as the fourth week of gestation." In this case which I am about to report there were no early symptoms of pain or hemorrhage, nor any pathological condition which

*Read before the Association of American Physicians and Surgeons, New York, N. Y., at the meeting of the New York Medical Society, October 10, 1894.

Read before the Board of Trustees, N. Y. Dispensary Medical Society, October 10, 1894.

NASAL POLYPUS:

ITS ASSOCIATION WITH ETHMOIDITIS
AND ITS TREATMENT BY
RESECTION OF THE MIDDLE TURBINATED BODY.*

BY W. E. CASSELBERRY, M. D.

PROFESSOR OF THERAPEUTICS AND OF LARYNGOLOGY AND RHINOLOGY
IN SOUTHERN METHODIST MEDICAL SCHOOL, HOUSTON MEDICAL COLLEGE,
DALLAS, TEXAS; AND ATTENDING PHYSICIAN TO WESLEY HOSPITAL, ETC.

THE analysis of forty cases of nasal polypus, drawn from private practice, which will be outlined in this essay, confirms the view which I have advocated in previous papers that nasal polypus is not a primary or independent affection, but that it is a symptom, or at least a concomitant, of other nasal maladies which stand to it in the relation of cause and effect. This fact, however, should not lessen our efforts to elucidate the pathologic relationships of polypus, since thereby we will not only acquire more intimate knowledge of the underlying conditions, especially the various forms of ethmoiditis, but will also be led to devise more effective methods of treatment.

In 1888, in a paper on Nasal Myxomata read before the Chicago Medical Society, I advised a vigorous surgical treatment, having for its object, first, access to and then eradication of the actual seat of attachment. Zuckerkandl's† researches on cadavers were summarized, by which he demonstrated that two thirds of all nasal myxomata originated from the middle meatus beneath the middle turbinated body, and that approximately two thirds of this number took origin from the edges of the hiatus semilunaris, which is a crescentic opening into the infundibular space whose upward and downward continuations enter, respectively, the frontal and maxillary sinuses, and which is located high up beneath the middle turbinated body.

In Fig. 1, which is accurately drawn from a divided skull, the middle turbinated body has been broken and turned upward, in order to disclose the hiatus semilunaris and bulla ethmoidalis.

In that paper it was recommended that hypertrophied inferior turbinated bodies be reduced to a normal size by cauterization, in order to facilitate the transmission of light and the passage of instruments to the seat of polyp growth, and also by the restoration thus of proper nasal drainage to prevent damming up of mucopurulent secretion in the middle meatus.

For the same reasons, septal excrescences, so frequently present, were to be removed. Meanwhile, as opportunity offered, the mucous membrane was to be carefully scraped off close to the bone by means of a scalpel or curette, when, in some instances in which sufficient space existed, it would be found possible to introduce a specially curved cancer point or some specially shaped middle turbinated body with which to destroy the actual seat of attachment. Further experience taught, however, that these were not cases to which the latter procedure was fundamentally applicable, and that the

to the formation of adhesions, and to the production of a septic eschar in a circumscribed location. Recently I have substituted satisfactorily curetting of this area for cauterization. A small but firm and sharp curette is insinuated upward beneath the middle turbinated body, in the direction from which the polyps proceeded, and their attachments, especially the borders of the hiatus and the bulla ethmoidalis, are well scraped.

In 1891, in a supplementary paper before the American Laryngological Association, I advised, as part of the radical treatment of nasal polypus, in certain cases in which the polyps emanated from the region of the hiatus semilunaris, the removal of the antero-inferior part of the middle turbinated bone in order to facilitate access to the actual points of development. Additional experience with this operation has but confirmed its utility and demon-

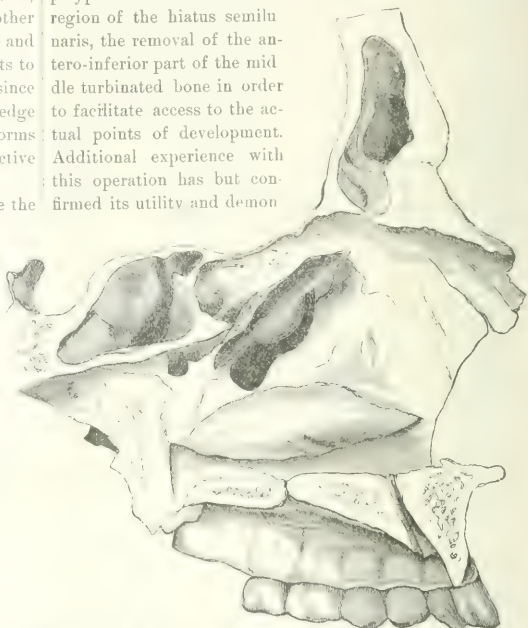


FIG. 1. Representing the outer wall of the left antrum with the middle turbinated body turned upward to show beneath the hiatus semilunaris, to the edges of which polyps are frequently attached.

strated its harmlessness, so that it will presently be referred to again more in detail. It was pointed out that the middle turbinated body, a process of the ethmoid bone, was rarely itself in a healthful condition in these cases; that it was often enlarged, or degenerated, or in a cystic state—a phase of the subject which it is desired to amplify in the present paper.

Through close observation of individual cases over prolonged periods, aided by the wider field for study of the deeper parts which is afforded by the operation of resection of the middle turbinated body, it has become evident that nasal polypus is usually a symptomatic manifestation of a form of degeneration of the ethmoidal mucoperiosteum, which frequently involves not only the middle turbinated bone, but also to some degree the ethmoid cells, and which for convenience is designated as ethmoiditis.

As a reminder of the scope of the various forms of

* Read before the American Laryngological Association, at its annual meeting, New York, 1891.

† Archiv für Otolaryngologie, 1888, viii, 371.

ethmoiditis I would refer to the classification formulated by Bosworth,* but without intention of committing myself to its limitations: "(1) Extracellular myxomatous degeneration, the disease being limited to the middle turbinate body; (2) intracellular myxomatous degeneration, in which not only the middle turbinate body, but also the ethmoid cells had undergone myxomatous degeneration; and (3) purulent ethmoiditis, which may or may not be associated with myxomatous degeneration of the ethmoid, but which usually is associated with nasal polyp."†

In fact, any or all parts of the ethmoid bone may be primarily affected by this process, which is serious enough in any stage, but which, if it be permitted to assume the suppurative type, becomes a most formidable affection. The deeply placed anfractuons ethmoid cells are difficult to drain, and infection of the maxillary, frontal, and sphenoidal sinuses is very liable to occur. Cases of exophthalmia with loss of sight from the pressure of empyema of the ethmoidal and sphenoidal sinuses have been reported by Dr. Hermann Knapp,† in which he was compelled to operate from the orbit. Fatal termination by infection of the cerebral meninges must also be regarded as among the possibilities in such cases. Mention is made of these points because it will appear from the cases reported as typifying the various forms of associated ethmoid disease that polypus is commonly one of the earliest prominent manifestations of ethmoiditis, and that when present the case should not be dismissed with a simple snaring as adequate to the occasion, but that it should be viewed as at least suggestive of a developing disorder which is liable to culminate seriously unless controlled. Furthermore, the treatment advised, especially resection of the middle turbinate bone, in addition to its efficacy for the polyps themselves, should be regarded as a prophylactic measure against the development of the more serious suppurative type of ethmoiditis by facilitating drainage from the ethmoid cells.

There is little to suggest concerning the ultimate cause of simple adenomatous or myxomatous ethmoiditis beyond a possible impairment of the vaso-motor nerve force supplied to this area, which, however, is more manifest in the next variety of the disease, which I now designate as vasomotor ethmoiditis. The following types, suppurative ethmoiditis and vasomotor ethmoiditis, can reasonably well be traced to outgrowths of the former varieties.

Regarding the etiology of the rare form of nasal polypus of inflammatory cause, there is nothing to add to the studies of Jonathan Wright,‡ recently reported on this connection, in which he described distinctions between the so-called nasal myxoma and true myxoma, the inference being that the same growth-form of inflammatory origin can be ascribed to hypertrophic rhinitis. This limited causation is exemplified in mycosis, but only by a few cases, and the reason for the comparatively rare transformation of the common hypertrophic process into a second inflammation character will remain obscure.

I will attempt a short classification of the various forms of nasal polypus, as follows: (1) *Simple adenomatous*, (2) *Simple myxomatous*, (3) *Vasomotor*, (4) *Suppurative*, (5) *Inflammatory*, (6) *Myxomatous*, (7) *Myxoid*, (8) *Myxoid*, (9) *Myxoid*, (10) *Myxoid*, (11) *Myxoid*, (12) *Myxoid*, (13) *Myxoid*, (14) *Myxoid*, (15) *Myxoid*, (16) *Myxoid*, (17) *Myxoid*, (18) *Myxoid*, (19) *Myxoid*, (20) *Myxoid*, (21) *Myxoid*, (22) *Myxoid*, (23) *Myxoid*, (24) *Myxoid*, (25) *Myxoid*, (26) *Myxoid*, (27) *Myxoid*, (28) *Myxoid*, (29) *Myxoid*, (30) *Myxoid*, (31) *Myxoid*, (32) *Myxoid*, (33) *Myxoid*, (34) *Myxoid*, (35) *Myxoid*, (36) *Myxoid*, (37) *Myxoid*, (38) *Myxoid*, (39) *Myxoid*, (40) *Myxoid*, (41) *Myxoid*, (42) *Myxoid*, (43) *Myxoid*, (44) *Myxoid*, (45) *Myxoid*, (46) *Myxoid*, (47) *Myxoid*, (48) *Myxoid*, (49) *Myxoid*, (50) *Myxoid*, (51) *Myxoid*, (52) *Myxoid*, (53) *Myxoid*, (54) *Myxoid*, (55) *Myxoid*, (56) *Myxoid*, (57) *Myxoid*, (58) *Myxoid*, (59) *Myxoid*, (60) *Myxoid*, (61) *Myxoid*, (62) *Myxoid*, (63) *Myxoid*, (64) *Myxoid*, (65) *Myxoid*, (66) *Myxoid*, (67) *Myxoid*, (68) *Myxoid*, (69) *Myxoid*, (70) *Myxoid*, (71) *Myxoid*, (72) *Myxoid*, (73) *Myxoid*, (74) *Myxoid*, (75) *Myxoid*, (76) *Myxoid*, (77) *Myxoid*, (78) *Myxoid*, (79) *Myxoid*, (80) *Myxoid*, (81) *Myxoid*, (82) *Myxoid*, (83) *Myxoid*, (84) *Myxoid*, (85) *Myxoid*, (86) *Myxoid*, (87) *Myxoid*, (88) *Myxoid*, (89) *Myxoid*, (90) *Myxoid*, (91) *Myxoid*, (92) *Myxoid*, (93) *Myxoid*, (94) *Myxoid*, (95) *Myxoid*, (96) *Myxoid*, (97) *Myxoid*, (98) *Myxoid*, (99) *Myxoid*, (100) *Myxoid*, (101) *Myxoid*, (102) *Myxoid*, (103) *Myxoid*, (104) *Myxoid*, (105) *Myxoid*, (106) *Myxoid*, (107) *Myxoid*, (108) *Myxoid*, (109) *Myxoid*, (110) *Myxoid*, (111) *Myxoid*, (112) *Myxoid*, (113) *Myxoid*, (114) *Myxoid*, (115) *Myxoid*, (116) *Myxoid*, (117) *Myxoid*, (118) *Myxoid*, (119) *Myxoid*, (120) *Myxoid*, (121) *Myxoid*, (122) *Myxoid*, (123) *Myxoid*, (124) *Myxoid*, (125) *Myxoid*, (126) *Myxoid*, (127) *Myxoid*, (128) *Myxoid*, (129) *Myxoid*, (130) *Myxoid*, (131) *Myxoid*, (132) *Myxoid*, (133) *Myxoid*, (134) *Myxoid*, (135) *Myxoid*, (136) *Myxoid*, (137) *Myxoid*, (138) *Myxoid*, (139) *Myxoid*, (140) *Myxoid*, (141) *Myxoid*, (142) *Myxoid*, (143) *Myxoid*, (144) *Myxoid*, (145) *Myxoid*, (146) *Myxoid*, (147) *Myxoid*, (148) *Myxoid*, (149) *Myxoid*, (150) *Myxoid*, (151) *Myxoid*, (152) *Myxoid*, (153) *Myxoid*, (154) *Myxoid*, (155) *Myxoid*, (156) *Myxoid*, (157) *Myxoid*, (158) *Myxoid*, (159) *Myxoid*, (160) *Myxoid*, (161) *Myxoid*, (162) *Myxoid*, (163) *Myxoid*, (164) *Myxoid*, (165) *Myxoid*, (166) *Myxoid*, (167) *Myxoid*, (168) *Myxoid*, (169) *Myxoid*, (170) *Myxoid*, (171) *Myxoid*, (172) *Myxoid*, (173) *Myxoid*, (174) *Myxoid*, (175) *Myxoid*, (176) *Myxoid*, (177) *Myxoid*, (178) *Myxoid*, (179) *Myxoid*, (180) *Myxoid*, (181) *Myxoid*, (182) *Myxoid*, (183) *Myxoid*, (184) *Myxoid*, (185) *Myxoid*, (186) *Myxoid*, (187) *Myxoid*, (188) *Myxoid*, (189) *Myxoid*, (190) *Myxoid*, (191) *Myxoid*, (192) *Myxoid*, (193) *Myxoid*, (194) *Myxoid*, (195) *Myxoid*, (196) *Myxoid*, (197) *Myxoid*, (198) *Myxoid*, (199) *Myxoid*, (200) *Myxoid*, (201) *Myxoid*, (202) *Myxoid*, (203) *Myxoid*, (204) *Myxoid*, (205) *Myxoid*, (206) *Myxoid*, (207) *Myxoid*, (208) *Myxoid*, (209) *Myxoid*, (210) *Myxoid*, (211) *Myxoid*, (212) *Myxoid*, (213) *Myxoid*, (214) *Myxoid*, (215) *Myxoid*, (216) *Myxoid*, (217) *Myxoid*, (218) *Myxoid*, (219) *Myxoid*, (220) *Myxoid*, (221) *Myxoid*, (222) *Myxoid*, (223) *Myxoid*, (224) *Myxoid*, (225) *Myxoid*, (226) *Myxoid*, (227) *Myxoid*, (228) *Myxoid*, (229) *Myxoid*, (230) *Myxoid*, (231) *Myxoid*, (232) *Myxoid*, (233) *Myxoid*, (234) *Myxoid*, (235) *Myxoid*, (236) *Myxoid*, (237) *Myxoid*, (238) *Myxoid*, (239) *Myxoid*, (240) *Myxoid*, (241) *Myxoid*, (242) *Myxoid*, (243) *Myxoid*, (244) *Myxoid*, (245) *Myxoid*, (246) *Myxoid*, (247) *Myxoid*, (248) *Myxoid*, (249) *Myxoid*, (250) *Myxoid*, (251) *Myxoid*, (252) *Myxoid*, (253) *Myxoid*, (254) *Myxoid*, (255) *Myxoid*, (256) *Myxoid*, (257) *Myxoid*, (258) *Myxoid*, (259) *Myxoid*, (260) *Myxoid*, (261) *Myxoid*, (262) *Myxoid*, (263) *Myxoid*, (264) *Myxoid*, (265) *Myxoid*, (266) *Myxoid*, (267) *Myxoid*, (268) *Myxoid*, (269) *Myxoid*, (270) *Myxoid*, (271) *Myxoid*, (272) *Myxoid*, (273) *Myxoid*, (274) *Myxoid*, (275) *Myxoid*, (276) *Myxoid*, (277) *Myxoid*, (278) *Myxoid*, (279) *Myxoid*, (280) *Myxoid*, (281) *Myxoid*, (282) *Myxoid*, (283) *Myxoid*, (284) *Myxoid*, (285) *Myxoid*, (286) *Myxoid*, (287) *Myxoid*, (288) *Myxoid*, (289) *Myxoid*, (290) *Myxoid*, (291) *Myxoid*, (292) *Myxoid*, (293) *Myxoid*, (294) *Myxoid*, (295) *Myxoid*, (296) *Myxoid*, (297) *Myxoid*, (298) *Myxoid*, (299) *Myxoid*, (300) *Myxoid*, (301) *Myxoid*, (302) *Myxoid*, (303) *Myxoid*, (304) *Myxoid*, (305) *Myxoid*, (306) *Myxoid*, (307) *Myxoid*, (308) *Myxoid*, (309) *Myxoid*, (310) *Myxoid*, (311) *Myxoid*, (312) *Myxoid*, (313) *Myxoid*, (314) *Myxoid*, (315) *Myxoid*, (316) *Myxoid*, (317) *Myxoid*, (318) *Myxoid*, (319) *Myxoid*, (320) *Myxoid*, (321) *Myxoid*, (322) *Myxoid*, (323) *Myxoid*, (324) *Myxoid*, (325) *Myxoid*, (326) *Myxoid*, (327) *Myxoid*, (328) *Myxoid*, (329) *Myxoid*, (330) *Myxoid*, (331) *Myxoid*, (332) *Myxoid*, (333) *Myxoid*, (334) *Myxoid*, (335) *Myxoid*, (336) *Myxoid*, (337) *Myxoid*, (338) *Myxoid*, (339) *Myxoid*, (340) *Myxoid*, (341) *Myxoid*, (342) *Myxoid*, (343) *Myxoid*, (344) *Myxoid*, (345) *Myxoid*, (346) *Myxoid*, (347) *Myxoid*, (348) *Myxoid*, (349) *Myxoid*, (350) *Myxoid*, (351) *Myxoid*, (352) *Myxoid*, (353) *Myxoid*, (354) *Myxoid*, (355) *Myxoid*, (356) *Myxoid*, (357) *Myxoid*, (358) *Myxoid*, (359) *Myxoid*, (360) *Myxoid*, (361) *Myxoid*, (362) *Myxoid*, (363) *Myxoid*, (364) *Myxoid*, (365) *Myxoid*, (366) *Myxoid*, (367) *Myxoid*, (368) *Myxoid*, (369) *Myxoid*, (370) *Myxoid*, (371) *Myxoid*, (372) *Myxoid*, (373) *Myxoid*, (374) *Myxoid*, (375) *Myxoid*, (376) *Myxoid*, (377) *Myxoid*, (378) *Myxoid*, (379) *Myxoid*, (380) *Myxoid*, (381) *Myxoid*, (382) *Myxoid*, (383) *Myxoid*, (384) *Myxoid*, (385) *Myxoid*, (386) *Myxoid*, (387) *Myxoid*, (388) *Myxoid*, (389) *Myxoid*, (390) *Myxoid*, (391) *Myxoid*, (392) *Myxoid*, (393) *Myxoid*, (394) *Myxoid*, (395) *Myxoid*, (396) *Myxoid*, (397) *Myxoid*, (398) *Myxoid*, (399) *Myxoid*, (400) *Myxoid*, (401) *Myxoid*, (402) *Myxoid*, (403) *Myxoid*, (404) *Myxoid*, (405) *Myxoid*, (406) *Myxoid*, (407) *Myxoid*, (408) *Myxoid*, (409) *Myxoid*, (410) *Myxoid*, (411) *Myxoid*, (412) *Myxoid*, (413) *Myxoid*, (414) *Myxoid*, (415) *Myxoid*, (416) *Myxoid*, (417) *Myxoid*, (418) *Myxoid*, (419) *Myxoid*, (420) *Myxoid*, (421) *Myxoid*, (422) *Myxoid*, (423) *Myxoid*, (424) *Myxoid*, (425) *Myxoid*, (426) *Myxoid*, (427) *Myxoid*, (428) *Myxoid*, (429) *Myxoid*, (430) *Myxoid*, (431) *Myxoid*, (432) *Myxoid*, (433) *Myxoid*, (434) *Myxoid*, (435) *Myxoid*, (436) *Myxoid*, (437) *Myxoid*, (438) *Myxoid*, (439) *Myxoid*, (440) *Myxoid*, (441) *Myxoid*, (442) *Myxoid*, (443) *Myxoid*, (444) *Myxoid*, (445) *Myxoid*, (446) *Myxoid*, (447) *Myxoid*, (448) *Myxoid*, (449) *Myxoid*, (450) *Myxoid*, (451) *Myxoid*, (452) *Myxoid*, (453) *Myxoid*, (454) *Myxoid*, (455) *Myxoid*, (456) *Myxoid*, (457) *Myxoid*, (458) *Myxoid*, (459) *Myxoid*, (460) *Myxoid*, (461) *Myxoid*, (462) *Myxoid*, (463) *Myxoid*, (464) *Myxoid*, (465) *Myxoid*, (466) *Myxoid*, (467) *Myxoid*, (468) *Myxoid*, (469) *Myxoid*, (470) *Myxoid*, (471) *Myxoid*, (472) *Myxoid*, (473) *Myxoid*, (474) *Myxoid*, (475) *Myxoid*, (476) *Myxoid*, (477) *Myxoid*, (478) *Myxoid*, (479) *Myxoid*, (480) *Myxoid*, (481) *Myxoid*, (482) *Myxoid*, (483) *Myxoid*, (484) *Myxoid*, (485) *Myxoid*, (486) *Myxoid*, (487) *Myxoid*, (488) *Myxoid*, (489) *Myxoid*, (490) *Myxoid*, (491) *Myxoid*, (492) *Myxoid*, (493) *Myxoid*, (494) *Myxoid*, (495) *Myxoid*, (496) *Myxoid*, (497) *Myxoid*, (498) *Myxoid*, (499) *Myxoid*, (500) *Myxoid*, (501) *Myxoid*, (502) *Myxoid*, (503) *Myxoid*, (504) *Myxoid*, (505) *Myxoid*, (506) *Myxoid*, (507) *Myxoid*, (508) *Myxoid*, (509) *Myxoid*, (510) *Myxoid*, (511) *Myxoid*, (512) *Myxoid*, (513) *Myxoid*, (514) *Myxoid*, (515) *Myxoid*, (516) *Myxoid*, (517) *Myxoid*, (518) *Myxoid*, (519) *Myxoid*, (520) *Myxoid*, (521) *Myxoid*, (522) *Myxoid*, (523) *Myxoid*, (524) *Myxoid*, (525) *Myxoid*, (526) *Myxoid*, (527) *Myxoid*, (528) *Myxoid*, (529) *Myxoid*, (530) *Myxoid*, (531) *Myxoid*, (532) *Myxoid*, (533) *Myxoid*, (534) *Myxoid*, (535) *Myxoid*, (536) *Myxoid*, (537) *Myxoid*, (538) *Myxoid*, (539) *Myxoid*, (540) *Myxoid*, (541) *Myxoid*, (542) *Myxoid*, (543) *Myxoid*, (544) *Myxoid*, (545) *Myxoid*, (546) *Myxoid*, (547) *Myxoid*, (548) *Myxoid*, (549) *Myxoid*, (550) *Myxoid*, (551) *Myxoid*, (552) *Myxoid*, (553) *Myxoid*, (554) *Myxoid*, (555) *Myxoid*, (556) *Myxoid*, (557) *Myxoid*, (558) *Myxoid*, (559) *Myxoid*, (560) *Myxoid*, (561) *Myxoid*, (562) *Myxoid*, (563) *Myxoid*, (564) *Myxoid*, (565) *Myxoid*, (566) *Myxoid*, (567) *Myxoid*, (568) *Myxoid*, (569) *Myxoid*, (570) *Myxoid*, (571) *Myxoid*, (572) *Myxoid*, (573) *Myxoid*, (574) *Myxoid*, (575) *Myxoid*, (576) *Myxoid*, (577) *Myxoid*, (578) *Myxoid*, (579) *Myxoid*, (580) *Myxoid*, (581) *Myxoid*, (582) *Myxoid*, (583) *Myxoid*, (584) *Myxoid*, (585) *Myxoid*, (586) *Myxoid*, (587) *Myxoid*, (588) *Myxoid*, (589) *Myxoid*, (590) *Myxoid*, (591) *Myxoid*, (592) *Myxoid*, (593) *Myxoid*, (594) *Myxoid*, (595) *Myxoid*, (596) *Myxoid*, (597) *Myxoid*, (598) *Myxoid*, (599) *Myxoid*, (600) *Myxoid*, (601) *Myxoid*, (602) *Myxoid*, (603) *Myxoid*, (604) *Myxoid*, (605) *Myxoid*, (606) *Myxoid*, (607) *Myxoid*, (608) *Myxoid*, (609) *Myxoid*, (610) *Myxoid*, (611) *Myxoid*, (612) *Myxoid*, (613) *Myxoid*, (614) *Myxoid*, (615) *Myxoid*, (616) *Myxoid*, (617) *Myxoid*, (618) *Myxoid*, (619) *Myxoid*, (620) *Myxoid*, (621) *Myxoid*, (622) *Myxoid*, (623) *Myxoid*, (624) *Myxoid*, (625) *Myxoid*, (626) *Myxoid*, (627) *Myxoid*, (628) *Myxoid*, (629) *Myxoid*, (630) *Myxoid*, (631) *Myxoid*, (632) *Myxoid*, (633) *Myxoid*, (634) *Myxoid*, (635) *Myxoid*, (636) *Myxoid*, (637) *Myxoid*, (638) *Myxoid*, (639) *Myxoid*, (640) *Myxoid*, (641) *Myxoid*, (642) *Myxoid*, (643) *Myxoid*, (644) *Myxoid*, (645) *Myxoid*, (646) *Myxoid*, (647) *Myxoid*, (648) *Myxoid*, (649) *Myxoid*, (650) *Myxoid*, (651) *Myxoid*, (652) *Myxoid*, (653) *Myxoid*, (654) *Myxoid*, (655) *Myxoid*, (656) *Myxoid*, (657) *Myxoid*, (658) *Myxoid*, (659) *Myxoid*, (660) *Myxoid*, (661) *Myxoid*, (662) *Myxoid*, (663) *Myxoid*, (664) *Myxoid*, (665) *Myxoid*, (666) *Myxoid*, (667) *Myxoid*, (668) *Myxoid*, (669) *Myxoid*, (670) *Myxoid*, (671) *Myxoid*, (672) *Myxoid*, (673) *Myxoid*, (674) *Myxoid*, (675) *Myxoid*, (676) *Myxoid*, (677) *Myxoid*, (678) *Myxoid*, (679) *Myxoid*, (680) *Myxoid*, (681) *Myxoid*, (682) *Myxoid*, (683) *Myxoid*, (684) *Myxoid*, (685) *Myxoid*, (686) *Myxoid*, (687) *Myxoid*, (688) *Myxoid*, (689) *Myxoid*, (690) *Myxoid*, (691) *Myxoid*, (692) *Myxoid*, (693) *Myxoid*, (694) *Myxoid*, (695) *Myxoid*, (696) *Myxoid*, (697) *Myxoid*, (698) *Myxoid*, (699) *Myxoid*, (700) *Myxoid*, (701) *Myxoid*, (702) *Myxoid*, (703) *Myxoid*, (704) *Myxoid*, (705) *Myxoid*, (706) *Myxoid*, (707) *Myxoid*, (708) *Myxoid*, (709) *Myxoid*, (710) *Myxoid*, (711) *Myxoid*, (712) *Myxoid*, (713) *Myxoid*, (714) *Myxoid*, (715) *Myxoid*, (716) *Myxoid*, (717) *Myxoid*, (718) *Myxoid*, (719) *Myxoid*, (720) *Myxoid*, (721) *Myxoid*, (722) *Myxoid*, (723) *Myxoid*, (724) *Myxoid*, (725) *Myxoid*, (726) *Myxoid*, (727) *Myxoid*, (728) *Myxoid*, (729) *Myxoid*, (730) *Myxoid*, (731) *Myxoid*, (732) *Myxoid*, (733) *Myxoid*, (734) *Myxoid*, (735) *Myxoid*, (736) *Myxoid*, (737) *Myxoid*, (738) *Myxoid*, (739) *Myxoid*, (740) *Myxoid*, (741) *Myxoid*, (742) *Myxoid*, (743) *Myxoid*, (744) *Myxoid*, (745) *Myxoid*, (746) *Myxoid*, (747) *Myxoid*, (748) *Myxoid*, (749) *Myxoid*, (750) *Myxoid*, (751) *Myxoid*, (752) *Myxoid*, (753) *Myxoid*, (754) *Myxoid*, (755) *Myxoid*, (756) *Myxoid*, (757) *Myxoid*, (758) *Myxoid*, (759) *Myxoid*, (760) *Myxoid*, (761) *Myxoid*, (762) *Myxoid*, (763) *Myxoid*, (764) *Myxoid*, (765) *Myxoid*, (766) *Myxoid*, (767) *Myxoid*, (768) *Myxoid*, (769) *Myxoid*, (770) *Myxoid*, (771) *Myxoid*, (772) *Myxoid*, (773) *Myxoid*, (774) *Myxoid*, (775) *Myxoid*, (776) *Myxoid*, (777) *Myxoid*, (778) *Myxoid*, (779) *Myxoid*, (780) *Myxoid*, (781) *Myxoid*, (782) *Myxoid*, (783) *Myxoid*, (784) *Myxoid*, (785) *Myxoid*, (786) *Myxoid*, (787) *Myxoid*, (788) *Myxoid*, (789) *Myxoid*, (790) *Myxoid*, (791) *Myxoid*, (792) *Myxoid*, (793) *Myxoid*, (794) *Myxoid*, (795) *Myxoid*, (796) *Myxoid*, (797) *Myxoid*, (798) *Myxoid*, (799) *Myxoid*, (800) *Myxoid*, (801) *Myxoid*, (802) *Myxoid*, (803) *Myxoid*, (804) *Myxoid*, (805) *Myxoid*, (806) *Myxoid*, (807) *Myxoid*, (808) *Myxoid*, (809) *Myxoid*, (810) *Myxoid*, (811) *Myxoid*, (812) *Myxoid*, (813) *Myxoid*, (814) *Myxoid*, (815) *Myxoid*, (816) *Myxoid*, (817) *Myxoid*, (818) *Myxoid*, (819) *Myxoid*, (820) *Myxoid*, (821) *Myxoid*, (822) *Myxoid*, (823) *Myxoid*, (824) *Myxoid*, (825) *Myxoid*, (82

The nostrils at best would have been considered narrow, the middle turbinated bodies were crowded, and drainage was defective. Efforts at cauterization resulted in troublesome adhesions and accomplished but little good. I ultimately removed the antero-inferior part of each middle turbinated body with the greatest possible benefit to the patient. Drainage was thereby restored throughout the middle and superior nasal channels as well as from the ethmoid cells, and the parts began to assume a healthier aspect.

The hiatus semilunaris and the ethmoid cells just above, which were thus exposed, were found filled and covered with polyp buds and myxomatous tissue. These were scraped by sharp curettes and picked off by cutting forceps—a process which was found much more effective in this region than cauterization. The patient is still seen at monthly intervals, when I sometimes pick off a polypoid excrescence or a piece of suspicious tissue to insure against redevelopment. She suffers only an occasional "filling up" of the nose, respiration being at most times free. She has escaped hay fever during the past three seasons, and is practically but not absolutely free from asthma.

This case is remarkable as an extreme example of the type—vaso-motor ethmoiditis; for the length of time, five years, during which she has persistently submitted to treatment; for the quantity and novel character of the surgical treatment; and for the satisfactory result attained.

The case is typical of a group which comprises nine of the entire series of forty cases, the salient features of which were the same in kind in all of the nine cases, although differing somewhat in degree. Three other patients of the group were subjected to the operation of resection of the middle turbinated bodies on one or both sides, and the same myxomatous degeneration and tumefaction of the mucosa of the underlying ethmoid cells was disclosed.

Asthma was a universal symptom, which to some extent has influenced the grouping together of these particular cases, since I am convinced that asthma of this variety is caused by a similar vaso-motor tumefaction of the bronchioles. Four of the nine cases suffered from hay fever or, as it is termed also by Bosworth, vaso-motor rhinitis, which further indicated the possession of a fundamental neurotic habit. Distention of the erectile tissues of the nose was common to the group, but in addition they all presented a hypersensitiveness in excess of that which attaches to ordinary hypertrophic rhinitis, various irritants, such as dust, coal-smoke fog, aroma from horses, etc., sufficing at any season to excite a form of tumefaction suggestive of vasodilatation. The ethmoid region is most of the cases secondarily involved.

All points considered, the descriptive term vasomotor ethmoiditis would seem well applied to this group of cases.

CASES OF VASO-MOTOR ETHMOIDITIS WITH POLYPOID DEGENERATION.

CASE V.—Mr. M., aged fifty years, has suffered from nasal polyp for ten years. The polypoid masses from time to time protrude from the nostrils, and are accompanied by profuse and fetid discharge of thin watery mucus, and occasional discharge of pus derived from the ethmoid cells. Having failed to get through the front wall of the septum and opened the nose to the right and the separated ends of the frontal bone.

He then applied to Dr. Christian Fenner, who removed the

to me with a view to avoidance of an external operation by reopening, if possible, the natural channel by intranasal treatment.

The left middle turbinated bone was enormously enlarged and in an advanced state of myxomatous degeneration, the whole mass, together with some small polyps, being packed in place so firmly as to obliterate the middle meatus and to press the septum toward the opposite side. I removed this diseased mass, bone and all, in fragments at different sittings by means of cutting forceps, which operation also served to expose polypoid excrescences with suppurative of the ethmoid cells, which were then scraped and drained. The other nostril required similar treatment, but to a less extent. The result is satisfactory concerning the nose, but the frontal fistulous discharge, although greatly diminished, is still perceptible, which indicates continued obstruction of the natural drainage channel, doubtless by polypoid tissue beyond intranasal reach. Attempts at cauterization of the frontal sinus *via* the nose and infundibulum were not entirely successful even after the removal of the degenerated tissue which had represented the middle turbinated body.

Polypus, in association with suppurative ethmoiditis, is represented in this series of forty by a group of six cases, of which the one detailed is essentially typical. It alone, however, was complicated by empyema of the frontal sinus. It and three others of the group, making four out of six, were complicated by empyema of the maxillary sinus.

In the case related the suppurative ethmoiditis and polyp formation were bilateral, although worse on the left side, on which the complications occurred. In the other three cases polyps existed in both nares, although suppuration of the ethmoid cells was unilateral in each and occurred on the same side as the empyema of the antrum.

In three of these cases the maxillary sinus was opened and drained, then resection of the middle turbinated bone was made, and in one case the posterior ethmoid cell was well opened by revolving burrs, which was done by following the lead of a probe which could be passed into this suppurating cavity. One case declined operation other than removal of the polyps; and the progress of suppurative ethmoiditis was made by observing the escape of pus through the superior meatus into the nasopharynx, which indicated involvement of the posterior ethmoid cells.

The two remaining cases of this group were subjected to resection of the middle turbinated bodies, by which better drainage was secured, this making five of the group of six cases which were thus treated, in addition to other measures, all being thereby permanently cured.

Currently, however, none of these cases suffered from asthma. In two, however, there could be no such positive determination, and in one case the evidence indicated of nervousity.

I believe that genuine ethmoiditis with polypoid degeneration is a sequel to the simple vasomotor type; that suppuration of the ethmoid cells comes after and aggravates the disease by increasing tendency to obliterate their natural drainage channels. This view is substantiated by Case V., in which suppuration of the frontal sinus occurred in conjunction with dilatation of the ethmoid cells. As mentioned by Fenner,* in the lateral mouth of

* Fenner's Diseases of the Head and Neck. Trans. of the Am. Assoc. Surg., 1891.

the inferior turbinated bone, and the other, the sharpest of all, was evidently devised for septum work. Unless it be an easy case, it will be unnecessarily painful to the patient to remove the desired quantity of the bone at a single operation. I more often accomplish it fragment by fragment, always desisting for the time as soon as hæmorrhage obscures the view, and this method is absolutely necessary in case the middle turbinated body is greatly enlarged and closely impacted within its space. The exact amount removed has varied in different cases, from a small fragment of the antero inferior part to a maximum of about one half of the entire bone.

As enumerated, group by group, I have made the resection in thirteen of the forty cases, and in retrospect it seems to me that there were still others in whom the operation was both indicated and feasible, probably enough to raise the proportion to about one half of the entire series.

34 WASHINGTON STREET.

AN ANATOMICALLY AND PHYSIOLOGICALLY TYPICAL CASE OF MUSCULO-CUTANEOUS NEURITIS.

By A. T. MITCHELL, M. D.

THIS case was so perfectly correct in all its aspects that I deemed it instructive enough for publication.

The patient was struck on the antero-external aspect of the forearm, immediately below the elbow joint, the blow not breaking the skin, but causing a decided contusion just below where the anterior of the two terminal cutaneous branches of the musculocutaneous becomes superficial. A severe neuritis manifested itself at once by pain and tenderness, with paresthesia and hyperæsthesia along the front and outer aspect of the forearm, showing the rapid extension of the neural inflammation downward. Paralysis was present from the beginning. The atrophic disturbance was an eruption, herpetic in character, accompanied by itching. Treatment was unavailing, and the nerve trunk became involved outwardly as high as the motor point of the musculo-spiral, evidenced by paralysis of that muscle, the biceps humeri, and brachialis anticus. At present, four months since the accident occurred, all three of these muscles are entirely atrophied and motionless as compared with the distribution of the external cutaneous nerve. The external biceps and external supinator both have greatly hypertrophied, the latter the only muscle capable of compensation. Electrical stimulation of the musculospiral nerve failed to get a response from the brachialis anticus, that muscle in this instance either not having a double nerve supply or the the musculospiral nerve having lost its motor control of its motor fibers. The location of the neuritic chord between the motor and the sensory fibre apparatus. That the nerve was struck above the point of supply to the musculospiral inflammatory process extending by continuity of tissue, the direction of motion having been upward. The only case of a neuritis of sensory fibres extending the peripheral hypertrophy of some of the cutaneous groups of muscles (thickened in the

A Colored Sneak Thief.—A colored male, about five years of age, named Harry, from Singapore, is the subject-matter of the *Illustrated Dispatch*. He has been twice taken by the London constabulary while sneaking into the shops of a Jew on a London street. He is now awaiting arrest for the third time, as well as against charges of burglary.

A STUDY OF ERYSIPELAS:

DESIGNING ITS NATURE; THE DIFFERENCE BETWEEN THE VITAL POWERS; SETTING OUT AS A FOUNDATION THE QUANTITATIVE INFLUENCE OF THE VARIOUS SURFACES AND THEIR SUBORDINATE CONDITIONS, WITH A HISTORY OF SEVERAL CASES.

By JULIUS SELVA, M. D.

PHYSICIAN IN CHARGE OF THE BOSTON CITY HOSPITAL; LATE INSTRUCTOR IN THE BOSTON ANATOMICAL INSTITUTE.

WHILE a surgical interne to the Boston City Hospital I have had the opportunity of observing many cases of erysipelas of unusual type, and from their character I have formed the opinion that the disease is more dangerous than it is usually supposed to be.

In looking up the literature on the subject I have been led to the belief that many writers consider this affection more from a local than from a general point of view; there is more attention paid to the local process than to the systemic disturbances, which are by far of capital importance, inasmuch as they may in many instances seriously endanger life or even cause death.

Some authors define erysipelas as "an acute and specific inflammation of the skin and subcutaneous tissue, characterized by diffuse, shining redness, pain, swelling, and elevated temperature of the affected part, terminating in desquamation and usually accompanied by fever."

Other writers go somewhat further and state at once that "erysipelas is, on the one hand, a general intoxication, and, on the other hand, an acute, progressing inflammation, with predominant serous infiltration of the tissues, associated with febrile movements, and produced as the result of local infectious action."

In the light of modern bacteriology it is a well-recognized fact that erysipelas is an acute infectious disease, caused by the *Streptococcus erysipelatos*, the micro-organism always obtaining an entrance into the system through a wound or a small abrasion of the skin.

That there are mild forms of the affection with localized symptoms is unquestionable; that these forms are quite common is also true; but it is not less true that there is sufficient clinical and pathological evidence to show that the general infection often overshadows the local condition and plays a more important rôle in the course of the illness. Indeed, there are cases where erysipelas presents the picture of a general intoxication almost without local trace.

The symptoms which the disease produces vary in their nature and intensity, and in reporting the following cases I will classify them in two different groups.

1. *First group.*—I shall consider those cases of erysipelas where the local inflammation is well defined, and the general infection is well marked, and the general condition of the patient is such as to show the local process as the chief feature, and the general condition as the secondary condition.

2. *Second group.*—I shall consider those cases of erysipelas which have resulted in the general effect upon the system, and upon the general condition of the patient.

A case occurred in the summer of 1893, which I have not yet had time to report, but which I have not yet had time to report.

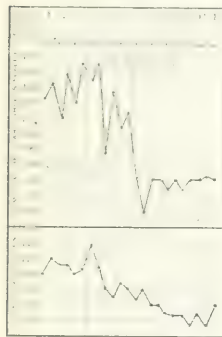
GROUP I.

CASE I. Erysipelas of the Face; Marked Pyrexia; Depression of the Vital Powers; Recovery.—M. F., aged forty-two years, laborer, entered the City Hospital on March 1, 1894.

History.—On the afternoon of February 23d he was thrown from a sleigh, landing on his nose.

Physical Examination.—Well developed and fairly well nourished. Heart and lungs not abnormal. Liver and spleen:

No enlargement made out. Face: On the left side of the nose there is a superficial wound half an inch in length and nearly healed. The skin covering the anterior and lateral surfaces of the face, the ears, and both sides of the neck is swollen, red, and painful, with a smooth, glazed appearance. The edges of the swelling are well marked. No evidence of fracture present. The urine is negative, excepting the presence of the diazo reaction. The pulse is 100, of fair strength and volume. The temperature is 103°. The respiration, 26.



Group I, Case I.

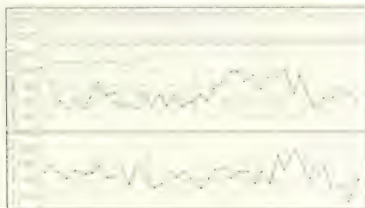
Subsequent History.—The case was treated by the judicious use of stimulants, careful diet, ice cap to the head, and lead wash to the inflamed skin.

On March 9th the swelling of the face had disappeared; desquamation was present, and resolution was thus being established.

The special feature of this case was the increased pyrexia for a period of six days (*vide chart*), corresponding to the height of the inflammation. The constitutional disturbances were well marked; headache and dizziness present. With the drop of the fever there was a similar decline of the pulse.

It will be noticed that toward the close of the disease the temperature became subnormal, as the result of the great prostration which the disease had produced. This depression of the vital powers is a feature of the affection which should always be borne in mind.

CASE II. Erysipelas of the Right Leg; Nervous of the Skin and Subcutaneous Tissue; Suppuration; Operation; Recovery.—P. K., aged thirty-eight years, laborer, entered the City Hospital on February 14th.



Group I, Case II.

History.—The patient was a laborer, and was employed in the City Hospital. He was admitted to the hospital on February 14th, 1894.

Physical Examination.—Heart action regular; no murmur. Liver and spleen not enlarged. Right leg: On the outer aspect of the thigh and extending downward to a little below the knee the skin is tense, red, and covered with vesicles of varying sizes. At places the skin is desquamating. There is fluctuation and bogginess of the soft parts.

Urine, acid; no albumin or sugar. Diazo reaction present.

Subsequent History.—On February 15th Dr. Watson made an incision seven inches long over the seat of the swelling in the right thigh. A large abscess cavity was opened between the skin and the fascia lata, involving the outer and posterior portions of the thigh. A pint or more of foul, acrid, thin pus was evacuated. Sloughs of the connective tissues were removed in masses by the curette. The skin appeared necrosed in places, and it was excised. Smaller counter-incisions were made for drainage.

Direct examination of the purulent fluid showed streptococci. Blood-serum cultures, at the end of twenty-four hours, showed pure cultures of the same micro-organisms.

There was a diminution of the temperature after the operation. The case made a steady recovery. A clean granulating area, fifteen inches in length and four inches wide, appeared in the course of two weeks. This ulcer healed slowly, and on May 8th, at the time of the patient's discharge from the hospital, it was almost entirely healed. Good general condition.

The treatment consisted of stimulants, nourishing food, and daily application of antiseptic dressing to the right thigh.

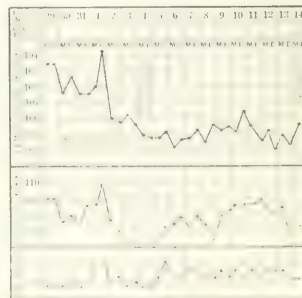
In the above-related case the virus did not confine itself to the superficial capillary lymphatics, but it spread to the subcutaneous connective tissue, thus bringing about suppuration, which process is extremely rare in ordinary erysipelas. So I will classify this case as one of the variety known as "phlegmonous erysipelas."

CASE III. Erysipelas of the Face and Scalp; Morphine Habit; Exhaustion; Death.—R. K., a married woman, aged forty-eight years, entered the hospital on January 29th.

Family history negative.

Past history: Patient has been addicted to the morphia habit in a marked degree for a number of years. Several ounces of the drug are said to be consumed in the period of four to five weeks.

Present illness: For a week has had swelling and redness of the nose, which swelling has now spread all over the face.



Group I, Case III.

Physical Examination.—Body fairly well developed and greatly emaciated. Face: The forehead and both sides of the face as far as the ear present a circumscribed swelling, of a pinkish color, fading on pressure and with shining, smooth appearance. Two small vesicles, a quarter of an inch in diameter,

are seen on the left cheek. The scalp: That portion covering the forehead appears similarly affected.

There was no apparent cutaneous wound. The temperature, 100°; pulse, 100, regular. Heart: No abnormal sounds; action weak. Lungs: Occasional râles; no dullness. Liver and spleen not palpable. Urine: Diazo reaction present; otherwise negative.

Subsequent History.—On January 30th the redness increased backward behind the ears. Alcoholic stimulants and nervous sedatives were given and lead-wash compresses applied on the face.

On February 13th the local process appeared to have subsided, desquamation ensued, and convalescence was apparently being established. This, however, was not the case. The patient's general condition became severely impaired; diarrhoea came on; she complained of pain in the posterior part of the legs; her heart became weak and irregular; and, in spite of nervous sedatives and active stimulation, death occurred on February 14th. There was no autopsy.

The clinical history of this case is interesting, because the disease, though apparently mild in its course and duration, was severe enough to bring on death in a subject who had been under the influence of morphine for a number of years—a subject who had become debilitated and of insufficient strength to counteract the prostration and toxic influence of the erysipelatoxigenic infection.

CASE IV. *Erysipelas of the Face; Fatty Degeneration of Muscles of the Right Thigh; Death from Septicæmia; Autopsy.*—M. G., a woman, fifty-two years of age, seamstress, entered the medical wards on February 7, 1894.

Family history and past history negative.

Present illness: Ten days previously had a fall, following which there was swelling, tenderness, and redness of the skin covering the forehead and eyelids. Patient is unable to walk on account of pain in the right thigh. Further history is not obtainable.

Physical Examination.—Body extremely fatty. Proportions, of fair strength and volume. Heart: Area of dullness not determined on account of the development of the lungs. Auscultation of heart and lungs impossible on account of the continued growling of the patient. Liver also swollen and indurated. Abdomen prominent, tympanitic, and tender. Extremities. Marked swelling about the outside of the right hip joint, with a large circumscribed area of the bone of the point of the neck, the scapular and acromioclavicular articulation, and the distal radius. There is pain at the right hip, greatly aggravated by motion or pressure. Tenderness also in the right arm.

Figure 1. The clay core, the freshwater surrounding clay core, the water of the lake bed, and water of the groundwater containing a well defined quartzite. These quartzite are sometimes incorporated in fossil structures. Fossiliferous clay cores, as they grow, in the right direction, in a porous, yellow, brown, and white, containing fossiliferous and fossiliferous, only in all directions. Fossiliferous, brown, brown, and brown, containing fossiliferous.

On 10 February 1986, the patient was seen again. The pain had shifted to the right hip, and the right leg was 1 inch shorter than the left; there was pain at the right hip, in the right thigh, and in the right knee. The patient was transferred to the orthopedic clinic. On 11 February, the patient was transferred to the orthopedic clinic. On 11 February, the patient was transferred to the orthopedic clinic.

bility were not detected, and final diagnosis as to the nature of the injury was not made.

On February 9th, at 3.30 a. m., patient entered into a deep collapse, with cold, clammy skin; cyanosis; intermittent, feeble pulse; and finally died at 6.20 a. m.

Autopsy on February 10th by Dr. Councilman.

Body large and extremely fatty.

The skin of the face is edematous and congested. Eyes nearly closed from oedema. Over the right eye there is a superficial contused wound about three centimetres long. Over the right buttock there is a large contusion, circular in outline, and about ten centimetres in diameter. Over the contusions and the surrounding skin there are large blebs filled with clear, blood-stained fluid.

Lungs and pleura: The pleurae smooth. There is a slight amount of fluid in the pleural cavity. There is also congestion and oedema in the posterior portions of the lungs.

Pericardium normal.

Heart very soft, pale, and flabby.

Peritonæum smooth. Several of the appendices epiploicæ hæmorrhagic.

Spleen somewhat enlarged, rather soft. Neither Malpighian
bodies nor trabeculae visible.

Kidneys of ordinary size. Cortex pale and cloudy.

Stomach and intestines normal.

Adrenal glands and pancreas normal.

Aorta: In the arch there are a number of calcified plates in the interior, the largest perhaps a centimetre in diameter.

Uterus somewhat enlarged and filled with mucoid material.

Muscles: The muscles of the right thigh in the neighborhood of the hip are pale and soft, almost diffuent.

There is no fracture.

Anatomical diagnosis: (1) Erysipelas of the face, (2) *Streptococcus septicemia*. Fresh examination of the muscles about the right hip joint showed extreme fatty degeneration of the muscular fibers and enormous numbers of streptococci. Few pus cells were present.

Cultures on blood serum of the liver, spleen, kidneys, muscles of the right thigh, and blood showed a great number of streptococci.

CASE V. *Streptococcus* of the Rabbit-foot; (Photo from Septicæmia; Autopsy).—O. C., a laboring man of about thirty-five years of age, entered the hospital on February 17th in an unconscious condition. The following are the findings:

[illegible]

The first two steps were followed fairly well by the women, the gowns remaining unstretched and undistorted, the gowns apparently of good tension until the last.

The inguinal glands on the same side are swollen, reddened, and in places in the tissues adjacent to them there appear to be small purulent foci. Subcutaneous fat abundant. Muscles dark red. Lungs: Both lungs are adherent at their apices. Their posterior portions are intensely congested. In both lungs the anterior portions are emphysematous. Heart of medium size. Valves, normal. Liver, very large and pale. Spleen weighs six hundred grammes; $11 \times 9 \times 5$ centimetres. On section, rather soft, darkened. The capsule tense.

Kidneys: Both kidneys enlarged. No appearance of nephritis. Adrenal glands and pancreas normal. Peritoneum smooth. Intestines: Large intestine and sigmoid flexure distended. Testicles normal. Anatomical diagnosis: (1) Erysipelas of the lower leg with infection of the lymphatics and acute septicæmia. (2) Acute swelling of the spleen. Cultures from blood and organs contain numerous colonies of the *Streptococcus pyogenes*.

CASE VI. *Erysipelas of the Ear and Scalp; Death from Septicæmia; Autopsy*.—A. B., laborer, forty-nine years of age, entered the City Hospital on January 12th. The patient was in a delirious condition and the history was not obtained.

Physical Examination.—Well developed and well nourished. Tongue, dry, brown-coated. Pulse regular and of good strength and volume. Heart negative. Lungs. Front aspects, negative; backs, not examined. Abdomen distended and tympanitic. Liver negative. Spleen obscured by tympany. Extremities negative. Face: The skin of the whole face is greatly swollen, red, and excoriated. There are blebs, and serous fluid oozes here and there. Eyes: Thick purulent discharge from conjunctiva. Urine not obtained.

January 15th.—Patient gradually became more and more delirious; the pulse became feeble and feeblor, irregular and dicrotic; no response to stimulation, and death occurred at 4 A. M.

Autopsy by Dr. Councilman, January 15th: Body large, with marked posterior curvature of thorax. Marked rigor mortis. Subcutaneous fat abundant. Muscles red, somewhat infiltrated with fat. Thorax narrowed; very deep antero-posteriorly. Scalp thick, filled with yellowish serum and pus; rigid, almost incapable of being bent. Skull thick and firm. Dura mater somewhat thickened. Meninges œdematous. Convolution of brain well developed; brain normal. Diaphragm extremely high. Heart lay almost at cleft of sternum; valves normal. Lungs, both adherent, congested posteriorly. Liver large and extremely fat. Spleen large, rather soft. Pancreas infiltrated with fat. Adrenal glands normal. Intestines: Mucous membrane rather pale. Testicles: Left is small, almost completely atrophied, right normal. Testes swollen and oedematous. Prostate congested and filled with pus.

Anatomical diagnosis.—(1) Erysipelas of the scalp and face.

(2) Septicæmia.

Remarks.—The history of the case is as follows: The patient was a laborer, and had been employed in the City Hospital for some time. He was admitted on January 12th, and died on January 15th. The patient was in a delirious condition, and the history was not obtained. The patient was well developed and well nourished. The pulse was regular and of good strength and volume. The heart was negative. The lungs were negative. The abdomen was distended and tympanitic. The liver was negative. The spleen was obscured by tympany. The extremities were negative. The face was greatly swollen, red, and excoriated. There were blebs, and serous fluid oozed here and there. The eyes had a thick purulent discharge from the conjunctiva. The urine was not obtained. The patient gradually became more and more delirious, and the pulse became feeble and feeblor, irregular and dicrotic. No response to stimulation, and death occurred at 4 A. M. The autopsy was performed on January 15th, and the body was found to be large, with marked posterior curvature of thorax. Marked rigor mortis was present. The subcutaneous fat was abundant. The muscles were red, and somewhat infiltrated with fat. The thorax was narrowed, and very deep antero-posteriorly. The scalp was thick, and filled with yellowish serum and pus. It was rigid, and almost incapable of being bent. The skull was thick and firm. The dura mater was somewhat thickened. The meningitis was œdematous. The convolution of the brain was well developed, and the brain was normal. The diaphragm was extremely high. The heart lay almost at the cleft of the sternum, and the valves were normal. The lungs were both adherent, and congested posteriorly. The liver was large, and extremely fat. The spleen was large, and rather soft. The pancreas was infiltrated with fat. The adrenal glands were normal. The intestines had a mucous membrane that was rather pale. The testicles were: the left was small, and almost completely atrophied, and the right was normal. The testes were swollen, and oedematous. The prostate was congested, and filled with pus.

(To be continued.)

THE NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 24, 1894.

INDIAN EXPERIENCE IN THE INCINERATION OF REFUSE.

As the practicability and expediency of disposing of cities' refuse matter by combustion is now a subject of earnest consideration in various municipalities, it is useful to learn what results have been arrived at in cities where the process has been tried. The experience of Calcutta is related in an editorial article in the October number of the *Indian Medical Gazette*. The writer, after stating that in theory the reduction of the garbage of an Indian city to a harmless ash by burning is the easiest way of disposing of it and the one that best meets sanitary requirements, goes on to remark that, in the beginning at least, practical difficulties arose which showed that the method was far from easy. It is six years, he says, since the question of its employment was raised by the health officer of Calcutta. At the outset the suggestion was met with the objection that in European and American cities, where the system had been successful, the refuse contained a large amount of unconsumed fuel in the shape of coal, coke, and charcoal, with only a small proportion of vegetable matter, so that the whole was easily burned, whereas in an Indian city it consisted chiefly of raw vegetables with a small percentage of ashes, wherefore its combustion would prove impracticable. This objection, which gave rise to considerable controversy, was finally set at rest by a practical trial, and it was shown that the refuse of Calcutta was combustible. But more than two years had now elapsed, and many persons looked upon the experimental work as a waste of time and money; however, as it had been demonstrated that the refuse could be burned without coal, whether in the cold season or during the rains, it was admitted that a substantial step had been taken. Many problems connected with the details of the necessary system of procedure had, it was true, been left untouched, but they were recognized as minor ones and not beyond the resources of engineering.

It was found that the furnaces used in English towns were unsuitable for the very bulky refuse of Calcutta and Bombay, for they soon became choked and did their work in a very slow and unsatisfactory way, so that frequently the odor proceeding from the chimney was so offensive a nuisance as to show that such furnaces would not do in crowded localities. In the effort to overcome this objection the engineers have since been so successful as to have constructed furnaces and accessory contrivances quite capable of burning Indian refuse without the least nuisance. These improvements have consisted in the production of a more intense heat in the furnaces themselves and in the passing of the smoke and gases from them over a fire or exposing them in some other way to a high temperature. The

intense heat lessens the amount of smoke and burns a larger amount of refuse, while the exposure of the gases to a heat that breaks them up into their constituent elements renders the fumes issuing from the chimney perfectly harmless. If the heat is raised to 1,500° or 2,000° F., the writer thinks, it is doubtful if the additional precaution of washing the gases and smoke is necessary.

MINOR PARAGRAPHS.

BACTERIA IN STREET CARS.

EXPERIMENTS recently made by Dr. Ezra Wilson, bacteriologist of the Brooklyn Health Department, demonstrate the presence of bacilli in the dust and sweepings of the street cars in that city. He has reported a fatal case of tuberculosis in a guinea-pig which had been inoculated with bacilli cultivated from dried sputum found in the cars. Health Commissioner Emory has decided, as a means of disinfecting the stations and cars of that city, that they shall be thoroughly cleansed every three days with a solution of bichloride of mercury. A sub-committee on the prevention of tuberculosis, of the Medical Society of the County of Kings, recently recommended that a city ordinance be passed making it a misdemeanor to expectorate in any public conveyance, but the suggestion was not carried out.

DISINFECTION OF TUBERCULAR SPUTUM BY PARACHLOROPHENOL.

According to *The Medical Week*, Dr. A. Spengler has found that parachlorophenol infallibly kills Koch's bacillus. He injected into the peritoneal cavity of guinea-pigs one cubic centimetre of an emulsion of tubercular sputum, prepared either with ordinary water or with a two-per-cent. parachlorophenol solution. On making the animals some three months later, those that had been inoculated with disinfected sputum were entirely free from bacillary infection, whereas those into which the emulsion unmixd with parachlorophenol had been injected presented, without exception, tubercular lesions.

THE TREATMENT OF CERTAIN NEUROSES BY OXYGEN INHALATION.

Dr. N. RUSSELL, reported in *The Medical Weekly*, has found oxygen inhalation very beneficial as an adjuvant in the treatment of a number of nervous diseases of a hysterical type. These patients often have the nervous and hysterical, and sometimes about the hysterical, of a hysterical tendency. They played hysterical and they generally believe that they are sick, because they cannot breathe and cannot sleep. They are very nervous. The therapeutic effect of these inhalations may well be due to the fact that they are constantly in the air and cause the tissues and changes in the circulation of the blood. It is a very good thing to have the oxygen in the air, and it is a very good thing to have the oxygen in the air.

INTERNAL ANTISEPTIC.

Dr. P. HUBBARD, of Paris, in a recent lecture, recommended the administration of the following powder to women suffering from leucorrhoea: R. Bicarbonate of Soda, powdered, 100 grains; Zinc, carbonate, 100 grains; Muc. and Starch, 100 grains; powder. Sig. Take from four to six grains daily.

CRIMINAL INEBRIETY IN SWITZERLAND.

The Medical Week states that in 1893 more than one half of all minor offenses in the Canton of Vaud were committed by inebriates, resulting in a cost to the canton of 120,000 francs for judicial expenses.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 20, 1894:

DISEASES	Week ending Nov. 13		Week ending Nov. 20	
	Cases	Deaths	Cases	Deaths
Typhoid fever	24	4	19	6
Scarlet fever	59	6	61	3
Cerebro-spinal meningitis	5	2	0	0
Measles	41	1	46	2
Diphtheria	163	31	168	30
Small-pox	36	0	0	0
Tuberculosis	125	104	86	96

The New York Society for the Relief of the Widows and Orphans of Medical Men.—The annual meeting of this society was held at the Academy of Medicine on the evening of the 21st inst. The society now has a hundred and forty-five members, of whom a hundred and four are life and forty-one annual members. Its total assets exceed \$195,000. Dr. Ellsworth Eliot was re-elected president; Dr. J. H. Emerson, Dr. David Webster, and Dr. Charles A. Leale were elected vice-presidents; and Dr. G. M. Smith, Dr. W. F. Cushman, Dr. J. S. Warren, Dr. J. Cabot, Dr. C. N. Knight, Dr. A. Jacobi, and Dr. S. T. Armstrong, managers for three years.

Changes of Address.—Dr. Stephen Smith Burt, to No. 21 West Thirty-second Street; Dr. A. M. Fernandez de Ybarra, to No. 148 Lexington Avenue.

The Death of Dr. Alexander F. Carroll, of Brooklyn, took place on Saturday, the 17th inst. Dr. Carroll graduated from the Long Island College Hospital in 1888, and for a short time was connected with the health department as a sanitary inspector. He was a member of the Medical Society of the County of Kings.

Army Intelligence.—General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry. General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry. General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry.

Naval Intelligence.—General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry. General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry. General J. B. Chas. is to be promoted to Major-General, and to be placed in the 1st Cavalry.

SIR: Having occasion a few days since to remove an external hemorrhoid from a woman who strenuously objected to chloroform as an anæsthetic, I used cocaine hydrochloride as a local destroyer of sensation. I regretted it very much, as the sequel proved, and it came near being a life-long regret. The amount used was *one grain*, which was injected into the tumor, and almost immediately the tumor was clamped and ablated, and the stump touched with the actual cautery. No special sensitiveness was experienced, and the patient was apparently all right. Fifteen minutes after the operation, while I was washing my hands preparatory to leaving the room, my patient suddenly complained of a stiffness of her fingers. On my reaching her the radial pulse could not be distinguished, the hands and arms were in strong tonic spasm, the heart was beating not over 40 a minute, the extremities were cold, with moist, clammy sweat, the mind was perfectly clear, and she complained of a strong sense of chest constriction. The pupils were widely dilated and were surrounded by annularis and blazing in the ears. She was apparently dying. I gave aromatic spirit of ammonia by the mouth and a hypodermic of whisky and strychnine, applied hot-water bottles to the feet as soon as they could be obtained, and persisted in artificial respiration for three quarters of an hour. The pulse slowly returned to the wrist, and gradually all the symptoms disappeared after giving me the fright of my life. I have rarely since the drug for this purpose, and, although I have frequently used chloroform, I have never had any insupportable effects, but never have I seen such alarming effects from it as I did in this case of cocaine. The urine was not prepared. I report this case simply with the hope that

it will prevent its further use except in very minute doses, if at all. Twelve hours after the accident no bad symptoms existed at all.

IRVING MILLER, M. D.

IRVING, MILLER, M. D.

VASO MOTOR NEUROSES.

LINCOLN, NEB., November 6, 1894.

To the Editor of the New York Medical Journal:

SIR: In the November 3, 1894, issue of the *New York Medical Journal* is an article by Dr. Culver, describing a very interesting case of some vaso-motor neurosis. If the doctor's suspicion is correct, that the patient may be an idiosyncratic victim of the odor or pollen of the *Humulus lupulus*, then no further examination of the case would be profitable, since idiosyncrasies are always laws unto themselves. I have under treatment a similar case, and am inclined to think that it belongs to the itching neurosis group of Crocker's classification of skin diseases. A review of the somewhat extensive subject of urticaria confirms me in this belief. It would be useful to know something of the hereditary history and personal peculiarities in Dr. Culver's case; in the absence of idiosyncrasy, considerable importance attaches to hereditary features of the disease. I would suggest that a reading of Dr. Osler's article, Hereditary Angioneurotic Edema, as it appeared in the April, 1888, issue of the *American Journal of the Medical Sciences*, and an examination of the several valuable references he has mentioned, would remove much of the obscurity surrounding Dr. Culver's case.

J. S. LEONHARDT, M. D.

APOCYNUM CANNABINUM

S. G. YAMAGUCHI, JR., *Author* 253

To the Editor of the New York Medical Journal:

SIR: If Dr. Lukeman, of Los Angeles, Cal., and Dr. Lowrey, of Neola, Iowa, will read an article that was read before the Medical Society of the State of New York, at Albany in 1889, by Dr. Harvey Jewett, of Canandaigua, N. Y., they will both find much information about *Apoecynum cannabinum* and its uses in valvular disease of the heart and dropsy in general. There is nothing new under the sun.

C. B. BROWN, M. D.

C. B. BROWN, M. D.

INTEGRATING FOR NAILS

01105-9700, H. A. Armstrong, Jr. (1993)

To the Editor of the New York Herald, Liverpool

See April 19 to 1, 1968 for last issue for November 1967 by E. E. Ross (University), in which he reports on various causes than badly fitting shoes that produce ingrowing toe nail. I would state that in the advanced stage of ingrowing toe nail the Wound and Children is badly done, but with ingrowing toe nail. When the patient has changed from the normal to the moderate and the nail has continued growing in. The patient was subjected to extreme pain. The *Hand* is taking three months for the nail to grow. The author is all over the place, the

Another case I recall was that of a bedridden patient in the surgical ward of the same hospital. His wife is remembered for the disease of the nervous system because of the great amount of the blood volume. The case is well illustrating every point. The patient began to grow in height, the first and only one noted amongst the patients throughout the course. The patient's condition is caused by the patient's own state of the resistance of increasing the patient's own condition to the bed.

The names from a series of publications given and "continued" by M. Huxley, of Paris, are used, a copy of which is given in an appendix. An index, besides, and lists of the

enlarged thyroid gland. The mother had exophthalmic goitre. Symptoms all marked, but not so extreme in severity as I have seen in other cases. The mother made an excellent recovery, and was dismissed at the end of two weeks after delivery with no apparent increase in the severity of her symptoms. The little one still had her goitre undiminished since birth. The nervous manifestations of the baby were those characteristic of "nervous" babies, so we were unable to distinguish them as having anything in particular to do with the enlarged thyroid.

ELIZA H. ROOT, M. D.,

*Attending Physician to the Obstetrical Ward, College Hospital
for Women and Children.*

THE SPREAD OF TYPHOID FEVER.

PROV. OF CAN. ARCHIVES: 1992

To the Editor of the New York Medical Journal:

Sir: Dr. Duke's article on The Dissemination of the Typhoid Bacillus, in your issue of the 10th inst., recalls three cases in my practice that are interesting in that particular line. I saw the first patient on Sunday, August 26th. He had been indisposed for about seven days, but had not taken to his bed till the preceding Wednesday. On the Tuesday following my first visit rose spots appeared and confirmed the diagnosis made from the usual symptoms present at the first visit. The patient had the usual run, the fever terminating by lysis at the end of the fourth week. About three weeks after the first patient had recovered two other patients who had been stopping in a neighboring house came down with the disease. The people in this house had their water supply from the same source as the people in the house occupied by the first patient. Investigation showed a defective trap in the house of the first patient. The water supply was from a spring noted for its purity, not only in the common acceptance of the term, but from chemical analysis. Granting that the typhoid bacillus does not generate *de novo* from filth or defective drainage, these being only favorable conditions to their development, the following is the only tenable solution: Another family in which there had been typhoid moved into the house with the family of the first patient, bringing their household goods, which may or may not have been properly disinfected. The time, over a year, that had elapsed since the disease was present with the family who moved in

J. Neurosci., October 1, 1997, 17(20):7801-7810 7801

REFERENCES

Page No. _____

To the Editor of the New York Medical Journal:

Journal an article by Dr. L. W. Davis, of Knoxville, Tenn., stating that the first child born to her mother was a girl; that she was born at Fayetteville, O., November 10, 1869, and last May, and delivered her of a full-term male child weighing himself six pounds.

Jan. 1, 1940. Jan. 10, 1940.

Based on our 3d-1d approach,

Manuscript received 15 November 2004; accepted 12 January 2005.

15. *Id.* *supra* note 12, at 1003. *Id.* at 1003 (quoting *Id.* at 1003).

Specimens in the Journal des Plantes Médic. (Paris) are deposited in the Herbar. of the Mus. de l'Hist. Nat. de Paris, and the others in the Herbar. of the Mus. de l'Hist. Nat. de Berlin.

The best obstetricians have long since condemned the use of this drug as an oxytocic during the first and second stages of labor. The reasons why are stated in the above-mentioned article. Still, it must be admitted that the drug can be of service in tedious labor, especially in uterine inertia.

The writer recently had occasion to test the efficacy of ergot in a case of uterine inertia, but with different results from that of Dr. Swayne.

I was called at 3 A. M. to attend to Mrs. H., primipara, aged twenty-nine years, robust and well formed. Labor pains had begun about ten o'clock in the evening, at which time the amniotic fluid had escaped. Upon examination, I found the woman in the first stage of labor. The pelvis was large and roomy, and the fetal presentation was normal. As the pains were weak and infrequent, I returned home.

At 10 A. M. I visited her again, and upon examination I found the os dilated to about the size of a silver dollar. As the pains were still infrequent, I left with the instruction to call me when the pains were getting stronger.

At 1.30 P. M. I was hastily summoned. The labor pains were then strong, regular, and frequent. On examination the os was found fully dilated and the head of the fetus well down in the pelvis. I calculated on a quick delivery. But in a short time the pains became weaker and at two o'clock ceased altogether. I waited until four o'clock, but there was still a complete uterine inertia. Forceps delivery was not permitted, and as I feared that the inertia would continue after the extraction of the fetus, and the resultant post-partum hemorrhage, I did not urge the instrumental delivery. There was no abnormal obstruction to the advance of the fetus, and I decided to administer ergot, for the first time in my obstetrical practice, before the completion of the second stage of labor. A teaspoonful of the fluid extract was given. The result was *nil*. Half an hour later another dose of one drachm was administered, but no uterine contraction had been excited in an hour from that time. As the ergot was of a reliable preparation and as I had had favorable results from its use a few days before in a case of post-partum hemorrhage, I came to the conclusion that the uterus in this case might have refused to respond out of pure contrariety.

Remembering that quinine had done me good service before, in a few cases where the pains had been weak, by its stimulating effect, I administered eight grains at half past five o'clock. The result was all I could wish for. At six o'clock the pains began, and twenty minutes later the woman was delivered of a large, healthy female child. The placenta followed a few minutes later. There was very little loss of blood.

It is interesting to note that in this case the ergot was given before the quinine.

1. That, sometimes at least, ergot of rye is unable to initiate labor pains anew in uterine inertia.

2. That in certain cases, however, it, like and possibly all the other drugs, is of no avail.

T. S. LEECH, B. A. B. S. M. D.

REPORT OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Addressed by Dr. George Chismore.

The Association of Genito-Urinary Surgeons, organized in 1887, has held its annual meeting at the Hotel Hamilton, New York, from May 29 to June 1, 1894.

The meeting was held in the Hotel Hamilton, New York, from May 29 to June 1, 1894. The Association of Genito-Urinary Surgeons, organized in 1887, has held its annual meeting at the Hotel Hamilton, New York, from May 29 to June 1, 1894.

—T. S. LEECH, B. A. B. S. M. D.

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, held in Washington, May 29, 30 and 31, and June 1, 1894.

The President, Dr. GEORGE CHISMORE, of San Francisco, in the Chair.

Modifications of Bigelow's Operation for Stone in the Bladder, Designed to Meet Cases in which the Prostate is Enlarged.—The PRESIDENT read a paper on this subject. He stated that the difficulty of clearing the bladder of stone by Bigelow's method increased in direct proportion to the amount and character of the encroachment upon that viscous by senile enlargement of the prostate gland. The modifications of the classical operation suggested by the author were as follows:

1. Substituting local for general anesthesia in cases where an anesthetic was required.
2. Short sittings, continuing the crushing only so long as fragments could easily be found, washing out the pieces, and stopping the moment symptoms of exhaustion, spasm of the bladder, or unusual distress occurred.
3. Removing the remaining pieces after the symptoms due to the previous operation had subsided—as soon as they could be felt with the searcher (usually within a week)—and repeating the process until the bladder was cleared.

When a patient with senile enlargement of the prostate and a stone presented himself for treatment, he was usually dependent on the catheter—had catheter stricture—and required a course of dilatation of the urethra as a preliminary to attacking the calculus. As soon as a No. 16 or 18 Van Buren sound would pass, the speaker said that he seized the first favorable opportunity and operated on the patient in his office. The bladder was emptied and from one to two fluidounces of a four-per-cent. solution of cocaine hydrochloride were injected; the lithotrite was then gently inserted and the stone seized and crushed. If, during this procedure, he became aware that quite a large fragment had apparently vanished, he made no prolonged attempts to find it. It was perhaps in some pouch, or lying in a fold between two projecting knobs of the prostate, or firmly imprisoned in a deep sulcus formed by the bladder wall doubled upon itself by the encroaching gland; in any case, it was entirely beyond the reach of the instrument, and there it would remain until it became slippery with mucus or in some other way was dislodged. When no more pieces could be found, the lithotrite was removed, a catheter as large as would pass was inserted, and the bladder was washed with a warm borated solution until the fragments ceased to come. The patient was then sent home with directions to keep quiet. In the great majority of patients operated on in this way there were no after-symptoms; they were better at once. In fifty-two cases reported by the author, the youngest patient was fifty-one; the eldest, seventy-four; the average, 66.36 years. There were twenty-two phosphate, twenty-four oxalate, five urate, and one mixed oxalate and urate calculi. The smallest stone weighed, dry, seven grains; the largest, one thousand grains; average weight, a hundred and forty-two grains. There had been no deaths and no serious complications attributable to these operations.

In connection with his paper the president presented a number of instruments and specimens.

Dr. L. B. GORDON, BAYON, of New York, said that he had been much interested in Dr. Chismore's paper, particularly in that part which referred to performing the operation under local anesthesia. The class of patients in whom this operation was

called for were especially susceptible to the secondary and effects of general anesthesia, which was apt to produce congestion of the kidneys or even actual inflammatory changes in them.

Dr. FRANCIS S. WATSON, of Boston, said that were it not for the fact that Dr. Chismore, in his paper, had presented such a strong array of figures, he would feel inclined to regard the method of operation recommended by him as a distinctly retrograde one. The Bigelow operation had its chief value in the fact that none of the fragments were left behind, and the high mortality following lithotripsy in former times had been due, in all probability, to the presence of such fragments. He did not see why this should not be so in Dr. Chismore's cases, where a large fragment was often left in the bladder. In cases where the hypertrophied prostate offered serious impediment to the passage of the evacuating tube through the deep urethra, the speaker was in favor of making a perineal incision, dilating the deep urethra, and then rapidly crushing and evacuating through the opening thus afforded. By this procedure we obviated the danger of injuring the deep urethra; death in cases occurring in old men was usually due to injury in this region.

Dr. W. K. Orie, of New York, said that in cases where the prostatic enlargement was considerable he felt inclined to favor the suprapubic operation, for the reason that it enabled one to entirely empty the bladder of stone; furthermore, the prostate itself could be operated on at the same time, if it was deemed advisable, and the bladder drained.

accord with the statement made by Dr. Watson regarding the bad effects that were apt to follow instrumental manipulation of the prostatic urethra in these cases. In cases where the stone formation was secondary to bladder inflammation, associated with a certain amount of inflammation of the prostate, he considered it advisable to drain the bladder.

Dr. JAMES BELL, of Montreal, said that he was surprised to learn that Dr. Chismore was in the habit of injecting such large amounts of cocaine into the bladder without producing dangerous results.

Dr. EDWARD MARTIN, of Philadelphia, said that, in view of the fact that chloroform had lately been shown to be even more irritating to the kidneys than ether, the employment of local anesthesia in these cases would be a practical improvement.

Dr. SIMON ABRAMSON, of New York, says that in patients with enlarged prostate and the burning and oppression of the bladder, with excessive irritability of that organ, it appeared to him that partial removal of a stone and leaving a fragment behind would be exceedingly beneficial. If not the

Dr. WILLIAM JUDKINS, of Cincinnati, said that he had employed cocaine in much smaller quantities than those mentioned by Dr. CANNON, and in some instances with striking results.

Dr. RANOR said that by the suprapubic method the bladder could best be drained, and that operation was certainly indicated in this instance. It was, however, the third time. A second attempt was failed. After making the incision, however, he tried to pass a catheter, succeeded, then gradually withdrew it, so as to gradually accustom the bladder.

The Transvaal found that some have their local anesthetic used local cocaine anesthesia in operating for stone. In a small percentage of these cases with very successful results in relieving pain and some instances lay there for several days sufficiently paralyzed to permit the stone to be passed the morning or evening of the day of the day. In patients with stones as large as the bladder was the stone removed thereby young patients and a frequent of stone left behind. It was also found to be most successful. A warning was to refer that treatment of stone after operation is relatively slow than the stone after lithotomy.

paxy, and the latter was certainly by far the simpler and easier of the two operations.

A Summary of the History and Present Position of the Operation of Castration for Hypertrophy of the Prostate.—

Dr. J. WILLIAM WHITE, of Philadelphia, was called on for his subject. He referred to the comparison long ago made by Velpeau and Sir Henry Thompson between prostatic and uterine fibromyomata, and stated that in a number of experiments on dogs made under his direction, castration had been followed by rapid atrophy, first of the glandular tissue, and then of the muscular elements of the prostate.

Theoretically the line of argument was as follows: The prostate, while not embryologically the true homologue of the uterus, was developed from structures quite distinct from those which formed the urinary passages. The structure of the prostate and that of the uterus were strikingly similar. The growth of the organ was in direct relation with the sexual life of the individual; its overgrowth occurred at a period when the sexual life was fading out, but was usually not extinct. The reproductive life ended sooner in the female than in the male, and accordingly we found fibromyomata appearing earlier in the former than in the latter. The histology of the growths and of their varieties was remarkably alike in the two sexes. The uterine tumors did not appear after the menopause, or, if present, underwent atrophy at that time. After at certain period of life there was no increase in the tendency to enlargement of the prostate, but rather the reverse. In the female, oophorectomy caused a disappearance of these growths and atrophy of the uterus itself. Castration almost certainly had the same effect upon the normal prostate.

The speaker then reviewed the literature of this subject, and reported a number of cases in which castration had produced a marked diminution in the size of an hypertrophied prostate.

Dr. BANGS said that any means whatsoever which promised some relief to this class of cases was certainly worthy of attention. In many of these cases long-continued drainage would achieve very good results. If the enlargement of the prostate was dependent on the activity of the testes, why not ligate the vessels of the organs instead of performing castration?

Dr. BRYSON said that in one case of prostatic hypertrophy that had come under his observation double castration had been performed, because both the glands had been involved by tubercular disease. Their removal had been followed by a distinct improvement in the man's symptoms, and there had been a

It is well known that castration would produce atrophy of the normal prostate. We must bear in mind, however, that in the enlarged prostate there were certain elements or conditions which were not affected by the removal of the testes. It is of interest to note that the atrophic prostate, although not as numerous in glands, still contains a certain amount of glandular tissue, and that this tissue is not as inactive as the atrophic prostate glands which were removed by the removal of sexual activity.

The Western world has an increasingly high dependence on the provision of raw materials produced by industrial off-shore economies. China, by its increasing role as a world oil and gas power, has greatly reduced this dependence.

15. A. J. Auerbach, R. P. Wyllie, *Earth Plan. Geophys. Res.*, **91**, 10,739 (1986).

The theory of Dr. Bosworth that this is a myxomatous inflammation is the true one, and the only logical treatment is that described by Dr. Casselberry in his very excellent paper.

Dr. MACKENZIE remarked that while he believed that ethmoiditis is responsible for many cases of rebellious catarrh which can be relieved only by surgical means, he wished to advocate more conservatism in the treatment of the condition. In many cases of nasal polypi, for example, the associated purulent discharge will cease after removal of the growth or the use of simple local medication. Much of the error in the practical handling of these cases has arisen from the mistaken theory that ethmoiditis is the cause of polypi. Such an etiological relationship might exist in certain cases—for example, syphilitic or traumatic cases—but aside from these conditions it is extremely rare.

Dr. F. W. HINKEL, of Buffalo, said he wished to second what Dr. Mackenzie had said of the possible dangers of interference with the ethmoid bone.

He recalled a case in point from his own experience. Three years ago he had removed the anterior extremity of the left middle turbinate, using Knapp's angular scissors and Bosworth's forceps. The patient was a woman about forty years of age. She had always been in excellent health, with the exception of a troublesome asthma. He performed the operation to relieve pressure on the septum and for hidden polypi, using cocaine. As he snapped the forceps and removed a piece of bone, she placed her hand to her head and complained of severe pain. She recovered after a while and, leaving his office, went to her boarding house. Three days afterward a medical friend asked him to go to see her with him. He then learned that after she had reached her room she became demented and said nothing but "yes" to every question. He went to see her the next day, but when he entered the room, in about four weeks she died. The prominent symptoms at the last were those of brain abscess. Dr. Roswell Park trephined the frontal bone above the left orbit. About half an ounce of pus was evacuated with a trocar. Patient died next day. The post-mortem examination was made by Dr. J. W. C. Wood. He reported that there was a focus of the abscess in the frontal bone. Unfortunately no examination of the heart was made. The thrombus might have originated from embolism from a detached valvular vegetation. He had been unable to trace the steps of the abscess. There were no evidences of intranasal inflammation.

It might have been a latent abscess, but all her symptoms followed the operation. He had since performed the operation not infrequently, but always with a recollection of that case.

[illegible]

On average all selected specimens were significantly larger in three dimensions than when specimens had first grown for primary density of 10000. Specimens were within the minimum size range reported in the order that they arrived in the laboratory, but somewhat. The last four growth increments in secondary treatment of these sites had increased from maximums and that when growth of small had been maximum, were a specimen in

charge of many years' standing had been cured. So much impressed had he been with this writer's description of the diseased conditions present in recurrent soft polypi that he obtained from Grünwald a set of his instruments. He had been able in one case, where as a complication eczema of the upper lip had existed for six years, caused by polypi and purulent rhinitis, by curetting the ethmoid cells, to cure the eczema. The nasal curette and bone forceps were used, and the anterior ends of the middle turbinated bones were removed in order better to enter the ethmoidal sinuses.

Dr. JONATHAN WRIGHT, of Brooklyn, said he had been deeply interested in the valuable paper. Dr. Mackenzie's advice to the younger men in regard to a better knowledge of anatomy was very good and quite acceptable. There was one point which was very important. When the bone was disensed the formation of a communication with the cerebral cavity was very easy. He was surprised that the accident did' not happen more frequently. He had had occasion quite recently to open quite a number of skulls, and this had taught him that it was very easy indeed to make an opening into the cerebral cavity. All skulls were not alike, some requiring considerable force to make an opening into the cerebral cavity, while others, being mere shells, were very easily punctured. He was in accord with Dr. Mackenzie concerning trephining. He differed somewhat from the reader of the paper regarding the removal of the anterior end of the middle turbinated bone. He had used serrated scissors and many other instruments, including some which he had had made according to Grünwald's published directions. He had found that there must have been some mistake in these directions, as the instruments were about four times too large. At any rate, their dimensions were greater than those of American noses, and consequently they could not be used for nasal operations in this country. They should have been made about the size of those presented by Dr. Mulholland.

Dr. WILLIAM H. DALY, of Pittsburgh, said that no case should be considered cured until one, two, three, four, or even five years had elapsed without a return of the polypi. The question was how to get a cure. And the way to get it is to change the soil and subsoil from which the polyps grow, by after-treatment.

Dr. CLEMENT HILL, of New York, said that he had been on the side of Dr. Mackenzie regarding the radical treatment of ethmoiditis. The removal of polyp and special resection of the middle turbinated bone was well borne. But his argument for the wholesale removal of the middle turbinated bone.

[illegible]

said that in appearance the hammer resembled the ordinary percussion hammer, such as was employed more especially on the continent, and particularly in France and Germany. It was therefore primarily a hammer, and the neurologist might use it for testing the tendon and muscular reflexes, and for percussing the spine and head. As the handle was made of hard rubber it became warm on friction, while the head, made of metal, always remained cold. Thus we had the means for examination for thermoanæsthesia. The cap on the small end of the hammer head was removable, and exposed a triangular-shaped spear about a sixth of an inch long. The other end of the head had the rounded rubber point, thus furnishing a sharp and dull point for examination for anæsthesia. The spear was divisible, one half remaining fixed in the hammer head, the other half sliding upon a scale graduated in millimetres and inches, and forming part of the handle of the hammer, thus making an excellent æsthesiometer; on replacing the cap and removing the cap at the large end of the hammer, a camel's-hair brush was exposed, giving a soft and the metal end a hard surface for examining the sensation. Thus we had, in one instrument, nearly all the apparatus necessary for making an examination of a nervous patient.

Non-operative Treatment of Metatarsalgia.—Dr. V. P. GIBNEY, of New York, read a paper with this title. He offered as a substitute for excision of the distal end of the fourth metatarsal bone or the branch of the peroneal nerve, a boot constructed on a Spanish last, with a heel that was a combination of an English and a French heel. The boot thus built transferred the weight from the ball of the foot to the plantar region just back of the ball of the foot to the heel and to that portion of the shank just anterior to the heel. The chief point that he insisted on was a snug fit around the instep shank and a rather loose toe portion. The boot had been made by an orthopædic shoemaker under his direct supervision, but could be easily imitated. A number of successful cases were reported.

Dr. CHARLES K. MILLS, of Philadelphia, had been in the habit of recommending a similar shoe to that advised by Dr. Gibney. Some patients, however, could not be relieved by any form of shoe, as a neuritis might have become established. Operative means would then become necessary.

Dr. PUTNAM considered it of value to make a carefully adjusted dressing on the inner side of the shoe.

A New Neuroglia Stain.—Dr. W. J. MORTON, of New York, presented some microscopic slides showing the new neuroglia stain of Weigert, which had been presented to him by Dr. Weigert on a recent visit to his laboratory in Frankfurt. The neuroglia fibers were stained blue, while the nerve elements were either not stained at all or at most very faintly. The medullary sheaths did not accept the stain, and thus the field was left clear for the differentiation of the neuroglia fibers. Dr. Weigert was not yet quite ready to publish this new stain, although he had been at work upon it for five years, no specimens had hitherto been exhibited on this side of the Atlantic.

Multiple Neuromata.—Dr. MORRIS presented for title a paper entitled "Cases of Multiple Neuromata, with an Etiological and Microscopic Study of a Large Nervous System Removed from the Human Body."

The cases had developed upon the plantar surface of the feet, between the first and second, and in some cases the third and fourth toes. The cases were presented in a paper which was read before the New York Academy of Medicine, and the results of the microscopic study of the removed system were presented in a paper which was read before the New York Academy of Medicine, and the results of the microscopic study of the removed system were presented in a paper which was read before the New York Academy of Medicine.

therefore been possible to enucleate the tumor and replace the nerve strands without the slightest injury to the latter. The tumor was a myxofibroma. The encapsulation of the tumor, and, at the same time, the confinement of the nerve bundles to the capsule had been novel and of importance to bear in mind in further operations upon such growths.

(To be continued.)

Book Notices.

BOOKS, ETC., RECEIVED.

Diseases of the Chest, Throat, and Nasal Cavities, including Physical Diagnosis and Diseases of the Lungs, Heart, and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland, and Oesophagus. By E. Fletcher Ingals. A. M., M. D., Professor of Laryngology and Practice of Medicine, Rush Medical College, etc. Third Edition, revised. With Two Hundred and Forty Illustrations. New York: William Wood & Co., 1894. Pp. xxvii-3 to 686. [Price, \$5.]

A Dictionary of Medicine, including General Pathology, General Therapeutics, Hygiene, and the Diseases of Women and Children. By Various Writers. Edited by Richard Quain, Bart., M. D. Lond., LL. D. Ed. F. R. S., President of the General Council of Medical Education, etc., assisted by Frederick Thomas Roberts, M. D. Lond., B. Sc., Fellow of the Royal College of Physicians, etc., and J. Mitchell Bruce, M. A. Abdn., M. D. Lond., Fellow of the Royal College of Physicians, etc., with an Appendix by Samuel Treat Armstrong, M. D., Ph. D., Visiting Physician to the Harlem Hospital, etc. New Edition, revised throughout and enlarged. Vol. I, Abdomen—Lysis. Pp. xxiv-1261. Vol. II, Macrolechia—Zyme. Pp. vii-1305. New York: D. Appleton & Co., 1894.

Text-Book of Hygiene: A Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By George H. Rohé, M. D., Professor of Therapeutics, Hygiene, and Mental Diseases in the College of Physicians and Surgeons, Baltimore, etc. Third Edition. Thoroughly revised and largely rewritten, with Many Illustrations and Valuable Tables. Philadelphia: The F. A. Davis Company, 1894. Pp. 553. [Price, \$3.]

A Clinical Manual of Diseases of the Eye, including a Sketch of its Anatomy. By D. B. St. John Roosa, M. D., LL. D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School and Hospital, etc. Illustrated by One Hundred and Seventy-eight Engravings and Two Chromo-lithographic Plates. New York: William Wood & Co., 1894. Pp. xx-3 to 621.

On Chorea and Choreiform Affections. By William Osler, M. D., Fellow of the Royal College of Physicians, London, etc. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. x-125. [Price, \$2.]

A Synopsis of the Practice of Medicine. By William Blair Stewart, A. M., M. D., Lecturer on Therapeutics, etc. New York: F. B. Trent, 1894. Pp. 5 to 433. [Price, \$2.75.]

A Manual of Modern Surgery; General and Operative. By James Collins Dickey, M. D., Demonstrator of Surgery, Jefferson Medical College, Philadelphia. With One Hundred and Eighty-eight Illustrations in the Text and Thirteen Full-page Plates in Colors and Tints, aggregating Two Hundred and Seventy-six Separate Figures. Philadelphia: W. B. Saunders, 1894. Pp. 16 to 17. [Price, \$10.]

poisoned it persists only from thirty seconds to a minute at the longest. But the duration of the attacks has no connection at all with their frequency. There was not one of these patients who had not had at certain moments during the same day several attacks of vertigo, occurring sometimes in the morning, sometimes while walking, and especially while working. It seems, says M. Bitot, that accidents of this nature are, to a certain degree, independent of the toxic agent which gave rise to the original disorder; for, whether the patients continue their work or whether they give up their employment, they are not the less subject to attacks which may come on when they least expect them, aside from any appreciable cause.

These various peculiarities, says M. Bitot, do not enable us to distinguish absolutely between vertigo due to lead poisoning and other forms of the disease; therefore it is necessary to resort to other information in order to ascertain its nature. In some cases vertigo does not show itself as a premonitory symptom in the first crisis of acute intoxication. In M. Bitot's cases colic showed itself first in all of them except in one where there had been torpor followed by paralysis of the forearm. It is later in the course of the disease that vertigo becomes established, and this fact is an essential point in the etiological diagnosis, and enables us to establish the following rule: Whenever a patient does not present symptoms of lead poisoning, such as colic or well-marked paralysis, this vertigo should be considered as dependent upon another cause. This is equivalent to saying that, aside from organic lesions, in cases combining lead poisoning and epilepsy, alcoholism, hysteria, neurasthenia, etc.—all affections that are capable of provoking a vertiginous condition—the vertigo can not be said to be due to lead poisoning unless the patient has previously presented symptoms of such poisoning.

Nephritis following Frictions with Naphthol.—In the *Revue médicale de médecine et de chirurgie pratiques* for October 25th there is an abstract of an article on this subject by M. Baatz which appeared in the *Centralblatt für innere Medizin*. The author relates two cases of nephritis following naphthol frictions for the itch. In the first case, that of a boy nine years old, the nephritis, which was not very pronounced, manifested itself in edema of the legs, the feet, and the scrotum, accompanied with slight albuminuria. Recovery followed very quickly under the influence of a proper diet and baths. In the second case, that of a boy six years old, anasarca and symptoms of broncho-pneumonia were observed when he entered the hospital. The urine, which was brownish in color, contained albumin, hyaline casts, and red blood-corpuscles. Notwithstanding the treatment, which was carefully applied as soon as the symptoms appeared, the situation became aggravated and the child died. At the autopsy extensive broncho-pneumonia of the left base and parenchymatous nephritis were found. The author thinks that the acute nephritis in this case was produced by the external use of naphthol. He points out the fact that the naphthol used was of the same quality as that used in the first case, and that the dose was the same. He also points out that the child in the second case was more susceptible to the action of naphthol than the child in the first case. Finally, Frohmüller has observed acute nephritis with albuminuria. Finally, Frohmüller has observed

sion in Liverpool would have taken up the question of the cause of Mr. Maybrick's death considered in relation to the new evidence; but as no one has done so the opinion of a barrister who has studied the medical evidence given at the trial may be found worthy of a place in your columns.

"The doctors who were examined on the trial on the question of arsenical poisoning were divided. Dr. Carter, Dr. Stevenson, and Dr. Humphreys were in favor of arsenical poisoning, the last-named being somewhat undecided. Professor Paul and Dr. Barron considered the cause of death doubtful. Drs. Tidy and McNamara were decidedly against arsenical poisoning. On the principle that the prisoner is entitled to the benefit of every reasonable doubt that arises, I may point out that an acquittal would not have prevented a prosecution for attempt to murder.

"But the jury decided in favor of the Crown physicians, and the judge seems so far to have concurred with them. The question therefore arises, How does the new evidence affect the question at issue between the doctors?

"The first thing, then, to be noted is that neither Dr. Stevenson nor Dr. Carter would have given a positive opinion as to the cause of death, but for finding arsenic in the body. Dr. Stevenson put this in the strongest and clearest way—"the diagnostic thing," he said, "was finding the arsenic." He and his colleagues appeared to have reasoned thus: This man died of gastritis or gastro-enteritis. That is a disease caused by receiving some irritant into the stomach. I open the body to discover what irritant, and I find arsenic and arsenic only. The symptoms no doubt are not the usual ones in arsenical poisoning, but the symptoms of arsenical poisoning differ very much from one case to another. Those observed in this case are certainly not inconsistent with arsenical poisoning; and besides finding arsenic in the body we find it in the remains of some of the food and medicine which he took, and it appears that there was a large stock of it in the house. What conclusion can we draw except that the man died of arsenical poisoning? If it be said that the amount found is not sufficient to explain his death, there are many instances in which nearly the whole of a fatal dose was eliminated from the body before death; and some persons can be killed with a much smaller quantity of arsenic than others.

"Now, it is evident that the whole of this reasoning falls to the ground if it can be proved that Mr. Maybrick was a confirmed arsenic-eater, who used to take arsenic in sufficient quantities to account for what was found in the body, whatever the cause of his death may be; that it was his practice to take it in his food or in his drink rather than separately, and that the large stock of arsenic found in the house was introduced by himself. But all this is now placed beyond doubt by the evidence of Mr. Blake, Mr. Bawcroft, and Captain Fleming.

"The evidence of the Crown physicians thus loses the basis on which it mainly rested; and there are various other indications that Drs. Tidy and McNamara had hit upon the truth, while Drs. Stevenson, Carter, and Humphreys were misled in their diagnosis by finding in the body an amount of arsenic not exceeding what would have been found if Mr. Maybrick had been killed by an accident a month previously. One of these is that the attendant physicians never suspected arsenic until Mrs. Maybrick was accused of having poisoned him; and this though Mrs. Maybrick had twice mentioned to Dr. Humphreys the possibility of arsenic being the cause of her husband's poisoning. Now, Dr. Humphreys actually administered arsenic to her husband, and it is a fact that the results were beneficial: Mrs. Maybrick discontinued the administration with-
out any ill effect, and it was only when it was found that it poisoned his child. At present, Dr. Maybrick's accusation, the

east door, so sat, and the south wind tried to blow a rose and infatuated clouds, and the children brought flowers—the one a poppy, the other a violet from the lawn, to the light of the convalescent, and Boring stood on a high chair with a brush smoothing her mother's hair, and we were told in a day or two she might ride out, joy came back to our house.

"And as we helped the old country doctor into his gig, we noticed not that the step was broken, or the horse stiff in the knees, and we all realized for the first time in our life what doctors were worth. Encourage them. They deserve every kindness at our hands."

Advice to Physicians.—The following advice, under the head of "How to Succeed," in the November number of the *Woman's Medical Journal* is quite as applicable to male as it is to female physicians, for whom it was intended:

"Various letters come to us asking methods of establishing one's self in practice. How to begin is the very pertinent question of young women in the profession who are standing, diploma in hand, at the door of their professional life. The question of location is usually decided by many outside influences, but if everything else is equal it is wise to go where there are other women practicing successfully. They have educated and familiarized the community with women as physicians, and this is a great step gained. A growing town, in a growing part of it, with an office fully equipped and with it a businesslike appearance, will do much toward declaring your intentions to the community. Having done this, call on your brother and sister practitioners, and after due length of time join your local medical association and attend the meetings regularly. This is a point which is frequently overlooked and 'pity 'tis, 'tis true.' Go to as many meetings as you can; they serve to keep you in touch with the best fellowship of the day; they inspire a healthful rivalry and a spirit of emulation that will augur well for you in the present and future. Whenever you are invited to read a paper, prepare it from your own experience, so far as possible citing the most approved authorities in support of your position. And, having taken a position and being convinced that it is tenable, hold to it until it is demonstrated fallible.

"People with opinions are always respected. Whether we agree with them or not, it is the physician who writes who makes his reputation, and it is reputation which brings success. I do not mean those who compile from others' work, but I mean those who, in the love of their fellow-men, set down that which they have found to be practicable and good for others to know, who have crystallized their thoughts into writing."

A Case of Hæmatophilia, with Death from Hæmorrhage following the Extraction of a Tooth. *The Lancet* or *Sup.*

[illegible]

When seen by the writer the patient was in a state of collapse from acute anemia. His temperature was 99.8° F.; the pulse 150, thready and feeble; respiration 24, sighing and stertorous. There was great restlessness and mental anxiety; the face and lips were bloodless; there were cold perspiration, tinnitus aurium, and dimmed vision. A stream of arterial blood trickled from the mouth. Vomiting of bloody material occurred frequently, followed by attacks of retching which terminated in syncope. Examination revealed a cavity in the lower jaw, nearly an inch in depth, the tissues of the gum badly lacerated, and the blood welling up with every beat of the heart. The source of the hemorrhage was evidently the inferior dental branch of the internal maxillary artery. A hypodermic injection of whisky with a fiftieth of a grain of strychnine sulphate was given. The cavity was cleared of some masses of cotton and packed firmly with a long strip of sublimated gauze wrung out in Monsel's solution. Thereupon the bleeding ceased, with the exception of a steady ooze from the tissues of the gum, which resisted all attempts to check it.

The restlessness, retching, feeble pulse, and irregular respiration improved greatly after an injection of morphine with atropine. Stimulation in the form of whisky and strychnine was administered when indicated, and the patient rallied slowly and imperfectly. The stomach and rectum were intolerant, and nourishment was time and again rejected. Transfusion was not feasible, but the writer determined to make use of a substitute for it which had given excellent results in a similar case. This consisted of throwing under the skin with the hypodermic syringe, at frequent intervals, several drachms of the standard saline solution. An immediate improvement followed. The pulse became fuller and more regular, and at nine o'clock in the evening the patient was resting easily. The pulse was 100; temperature, 100.5° F.; respiration, 18. The surface of the body was warm; the patient was conscious and spoke of feeling better. At 3.30 a. m. the patient sank suddenly, the bleeding from the gum increased, but prompt stimulation resulted in prompt reaction.

Stimulants, subcutaneous injections of saline solution, and nourishment, together with constant watchfulness, carried the patient along until 3.30 p. m., when Dr. Powell saw the case in consultation. His prognosis was unfavorable, and he agreed with the treatment given. He also informed the writer that the patient had been under his care for several months for anemia and general debility, without manifesting much improvement after careful treatment. Between 5 and 6 p. m. the radial pulse could not be felt at the wrist, and the patient seemed to be *in articulo mortis*. Nitroglycerin, warmth, whisky, and strychnine were then used with a happy result.

Dr. Bates remained with the patient from 3.30 p. m. until 4 a. m., when he left the case in the hands of Dr. Powell until 10 a. m. The patient had for several hours retained nourishment; the attacks of retching had almost entirely ceased; the pulse was apparently stronger. At 9 p. m. the patient began to sink rapidly, and finally expired at 9.30 p. m., seventy-six hours after the extraction of the tooth.

The family history shows well-marked phthisical taint upon the maternal side, while the paternal is markedly neurotic. No history of other cases of hæmorrhage in either family could be obtained. The patient was the only child. He had his first hæmorrhage when a young boy, and those which followed were all of traumatic origin. The quantity of blood lost was enormous.

The writer has had two similar cases, neither of them fatal, in which bleeding, profuse and hard to check, had followed extraction of a molar tooth in one case, and the snipping of the frenum of the penis in the other.

position of the intestine in which the opening had been made. Masses of fecal matter were given off as this solution decomposed, and it roughened the peritoneal coat of the intestines before it could be washed off. The peritoneal cavity was filled with hot saline solution, and the wound closed without drainage.

The time occupied by the operation was forty-five minutes. It was fairly well borne. Stimulants were administered at 9, and again at 10 A. M. At 12 M. the patient's temperature was 98.5°, her pulse was 100, and her respirations were 24. She vomited once, and then but little. During the afternoon nutritive enemata were given. At 9 P. M. her temperature, pulse, and respirations were 100.5°, 100, and 24, respectively. The patient was free from pain and nausea; she urinated freely and slept during the afternoon.

June 3d.—At 4 A. M. by mistake the sister gave a cathartic. At 6 A. M. her temperature was 100°, her pulse was 100, her respirations were 24. At 8 A. M. she vomited a little. At 10 and 11 A. M., 12 M., and 1 P. M., powders containing each one tenth of a grain of calomel, with one grain of bicarbonate of sodium, were given. At 4 P. M. a large movement resulted. At 7 P. M. her temperature was 98.5°, her pulse was 80, her respirations 18. The patient retained nourishment, and slept much during the day and passed a comfortable night.

4th.—The patient had a large stool at 5.30 A. M. At 9 A. M. her temperature was 98.5°, her pulse was 80, and her respirations were 24. At 5 P. M. they were 99°, 72, and 18, respectively.

5th.—The patient had remained comfortable and her temperature was normal, and remained so till the 8th of June, when there was a slight rise. The abdominal wound was examined, and it looked a little red. The sutures were removed and were found to be clean.

On June 10th, the eighth day following the operation, the superficial part of the wound was opened, and an ounce or two of fetid pus escaped, which had a strong fecal odor. This superficial cavity was syringed out with the strong solution of hydrogen dioxide. On the 11th of June there was no fecal odor, and the discharge from the abscess was slight. Her temperature became normal again, and remained so till the 21st of June. She began to complain of pain on passing urine, of some backache, and of a yellowish discharge which escaped from her vagina. Her temperature now ranged from 99° to 102°, and her pulse from 92 to 102. This seemed to be the first indication of the return of the patient's condition to what she was subject to malarial chills, and that the time for her men-

struation had arrived. On the 24th of June she again complained that this caused pain in the uterine region. She now

was in the third month of pregnancy. The abdominal wound had united primarily. On opening the peritoneal cavity it was found to contain about three ounces of blood-stained fluid. The bowels were somewhat distended, and on the left side, just below the site of pain complained of by the patient, they were adherent to the anterior abdominal wall. Breaking these up, a small perforation was found posterior to the larger button. The lines of union over both buttons were perfect. The intestine here was flexed and adherent, giving rise to the fatal obstruction. At the site of the abscess partially excised at the previous operation there was no sign of infection, but an abscess was found posterior to the abscess under the adhesions that were not broken up previously.

The points of interest in this case are:

1. The severity and sudden onset of the symptoms.
2. The prompt reaction brought about by the use of copious and trichlorine as stimulants.

As this was done there came into view a knuckle of ileum which was divided transversely and symmetrically almost from one mesenteric border to the other. There was no fecal matter in this portion of the intestinal canal. Nine inches from the first solution of continuity a second was discovered, which resembled the first in every particular. The edges did not have the appearance of having been recently cut, and it did not seem possible that they had been cut accidentally in the course of the operation. The points of division corresponded to the points at which the ileum was found constricted by mesenteric bands at the primary operation. The patient being feeble, it was deemed wise to make the operation of as short duration as possible, and the bowels were anastomosed at both points by Murphy buttons. Unfortunately, only one medium-sized button was available, and the second point being near the cæcum was joined by one of the larger size. Its segments were introduced with some difficulty on account of its size. A strong solution of hydrogen dioxide was poured over the intestines at this point. Its decomposition was effected with much rise of temperature, and saline solution was poured over them promptly, but not soon enough to prevent roughening of the serous membrane. The weaker solution does not do this. Many of the intestinal adhesions were now broken up, the bowels were returned to the peritoneal cavity, and a search was made for the abscess. One was found in the right broad ligament involving the right tube. This mass was removed, but in doing so the sac was broken, and much pus escaped into the pelvic cavity. This was sponged out, and hydrogen dioxide was poured into the cavity; as the patient's strength was failing, some adhesions posterior to the uterus were left undisturbed. The cavity was irrigated with hot sterilized saline solution and the abdominal wound was closed. The duration of the operation was two hours. The amount of ether used was six ounces. Stimulants were administered, and the patient rallied. At 4 P. M. her temperature was 101° and her pulse was 120.

July 8th.—The patient passed a good night, nutritive enemata with stimulants being administered. She passed a fair amount of urine.

There was nothing of interest to record till the 9th of July, at 3 A. M., when the patient vomited fecal matter freely. Her temperature was 102°, her pulse was 120, and her respirations were 24. At 6 A. M. she complained of a sharp pain in her left lumbar region. At 11 A. M. her temperature had risen to 104°, her pulse was 120, and her respirations were 20. The vomiting continued at intervals during the day. A consultation was held, but it was decided not to interfere further, and the patient died at 3 A. M., July 10th, twenty-four hours from the time fecal vomiting had begun, and sixty-four hours after the operation.

26th. Autopsy.—The abdominal wound had united primarily. On opening the peritoneal cavity it was found to contain about three ounces of blood-stained fluid. The bowels were somewhat distended, and on the left side, just below the site of pain complained of by the patient, they were adherent to the anterior abdominal wall. Breaking these up, a small perforation was found posterior to the larger button. The lines of union over both buttons were perfect. The intestine here was flexed and adherent, giving rise to the fatal obstruction. At the site of the abscess partially excised at the previous operation there was no sign of infection, but an abscess was found posterior to the abscess under the adhesions that were not broken up previously.

The points of interest in this case are:

1. The severity and sudden onset of the symptoms.

2. The prompt reaction brought about by the use of copious and trichlorine as stimulants.

3. The early onset of faecal vomiting—eleven hours after the beginning of the attack.

4. The large alvine dejection following the administration of the enema, other symptoms of obstruction meanwhile continuing.

5. The large amount of fluid in the abdominal cavity found at the primary operation.

6. The strangulation of the intestine by two mesenteric bands a few inches apart.

7. The recovery of the intestines, except at the points of constriction, after thirty six hours of strangulation and their having become dark and dull in color, the ecchymosis extending into the mesentery.

8. The fecal movement thirty-six hours after the primary operation, followed by the immediate fall of the patient's temperature to normal and remaining so for five days.

9. The abscess of the anterior wall, giving when opened a faecal odor, and none thereafter.

10. The possible independent pyosalpinx (?), the pelvic abscess having no communication with the abscess and sinus in the anterior wall.

11. The adherence of the intestines to the anterior wall, and the mass of adhesions found at the second operation.

12. The bowels symmetrically divided at the former points of constriction.

13. The double anastomosis by Murphy buttons.

14. The perforation posterior to the larger button and the complete closure of this by adhesions.

15. The flexure of the intestine, causing fatal obstruction.

16. The site of the pelvic abscess, which was partly removed at the second operation and disinfected with hydrogen dioxide, and had remained clean sixty hours after the completion of the operation.

Remarks.—In the early diagnosis the writer was misled by the fact that at first no history of previous peritonitis or injury could be drawn out; the attack had occurred fifteen years previously and the patient had forgotten it; also by the absence of vomiting, which as we will see, is constantly continuous, and early symptom; also by the presence of right lumbar tenderness and pain, which is usually absent. The medical course of this case, with the history of previous peritonitis, of chronic constiveness, of recurrent attacks of colic from time to time, and the sudden seizure after the use of powerful cathartics, was the story of strangulation by a cord, which means, according to Trousseau about five per cent. of all cases of intestinal obstruction. Opium and strychnine are not to be resorted to, except with caution, to come some trouble, that proved to be in this case, but must be taken as a failure. The diagnosis should rest on early consideration, and, if once the necessity for operative measures should be required by the patient, and the statement made that the abdominal engorged will have no curative effect, but will only induce the symptoms and put the patient in a worse condition to bear what is to follow. For this reason the use of opium is dangerous to patient and physician alike. The duration of the present

important. At first it was intermittent, which meant that the obstruction was complete; but this was indicated later when it became continuous and faecal vomiting occurred. This seldom appears before the fifth day. The large stool following the enema while the ileum was tightly compressed by bands shows how unreliable is this symptom. In this case only the patient was misled, as the other symptoms continued with unabated severity. Had morphine been administered during this time and the patient made comfortable, her consent to removal to the hospital with a view to operative measures would never have been given. Cruel as it seemed to allow the patient to bear severe pain for hours, it was at that time the best service that could be rendered her.

The large amount of fluid found in the abdominal cavity at the first operation, and the absence of intestinal agglutination with general peritonitis, would tend to confirm the writer's theory that it may be possible to limit or prevent the formation of adhesions by filling and closing the abdominal cavity with the sterilized saline solution—0.6 per cent. The adherence of the intestine to the anterior wall, and the mass of adhesions found at the second operation, notwithstanding the use of the saline solution to prevent them, is of interest. The writer's theory is that they formed after the solution was absorbed, on account of the perforations for the purpose of protection.

In August of this year, at the Carnegie Laboratory, with the assistance of Dr. Titterington, twenty experimental operations on dogs were undertaken, and it was found that twelve ounces of the saline solution could be safely introduced into the peritoneal cavity of a dog weighing from fifteen to twenty pounds; that it was absorbed in from twenty to thirty hours; and that in no case where it was used were there intestinal adhesions, notwithstanding the fact that some portions of the intestines were in most cases drawn and well exposed, with a few from *Aethusa* solution, or a 1-to-20 carbolic-acid solution. In one case they were exposed and the surface was covered with iodoform points, except in those cases where there was some intestinal complication, such as a failure of a suture, or perforation from one cause or another.

It is not the writer's purpose in this paper to attempt to detract from the brilliancy of Professor J. B. Murphy's invention, or to doubt its utility, but to show, if possible, that it is not to be used to advantage. (117)

proper understanding of its dangers, which are numerous. It is, in the writer's opinion, somewhat unsurgical: 1. Because it places in the hands of a foreign body which is entirely untrained, and whose movements are entirely involuntary, the instrument. The danger is increased because it is thrust by the patient's own hand. It is, however, a failure in the patient's hands, and is not made of the cutter rather than upon the skill of the surgeon, the point of the author being aimed at being the patient's chief instrument. In an emergency, however, in holding the spring, he can possibly move it enough to cut the tissue of the stomach and its contents, and the patient will probably die of hemorrhage. In practice, the writer is not sure that it will be used. In practice, the writer is not sure that it will be used. In practice, the writer is not sure that it will be used.

was the most appropriate in this case, although I am thoroughly convinced that the Maunsell operation is the one to be used in the majority of cases."

In conclusion, the writer can but believe that the best surgery is that which requires the fewest mechanical devices and the fewest special instruments for the accomplishment of its purpose, other things being equal; and the writer's own experience would at this time lead him to believe that Dr. Ricketts is right in saying that the Maunsell operation is the one to use in the majority of cases and that as time passes it will be better appreciated, as it deserves to be. At present there have been only three cases placed on record, and, as far as the anastomosis was concerned, all were successful. They are too few to build on, but they point the way to a thoroughly surgical, quick, and

easy method of intestinal anastomosis, adaptable to any portion of the canal—a method which is perfectly safe in the hands of those who have the proper experience and technical skill. If for any reason a lateral anastomosis is desired, what can be better than the method devised and advocated by Dr. Robert Abbe in the *Medical Record*, April 2, 1892? This, like the Maunsell method, requires no mechanical aid for its execution, and both are exquisite surgical devices.

APPENDIX.

Through the courtesy of Professor J. B. Murphy, which is hereby acknowledged, and of some other gentlemen, the writer has been able to collect twenty-three cases of intestinal resection in which end-to-end anastomosis has been

RESECTION, END-TO-END ANASTOMOSIS.

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Method.	Time.	Dress.		Remarks.
								R.	D.	
1	June 13, 1894.	Not published.	Tachemont.	Strangulated hernia.	Resection of small intestine.	Mesenteric fixation.	1 1/2 hr.	—	—	Wound dressed 18-19 days.
2	June 21, 1894.	"	Cochrane, J. W.	Strangulated hernia.	"	"	2	—	—	Resection of 20 inches of small intestine. 1894
3	June 15, 1894.	"	McCallum, J. I.	Strangulated hernia.	"	"	2	—	—	Twelve inches of ileum resected.
4	April 2, 1894.	"	Dr. Newton.	No operation.	"	"	2	—	—	Button passed 14th day. (Small child.)
5	April 7, 1894.	<i>N. Y. Med. Jour.</i> , Nov. 1894.	Dr. Dennis.	Strangulated hernia.	Resection of small intestine.	"	2	—	—	Button passed 14th day. (Small child.)
6	May 12, 1894.	Not published.	Meyer, Willy.	Intussusception.	Resection of small intestine.	"	2	—	—	Perfect recovery.
7	June 10, 1894.	"	Meyer, Willy.	Intussusception.	Resection of small intestine.	"	2	—	—	Perfect recovery.
8	June 18, 1894.	<i>N. Y. Med. Jour.</i> , Dec. 1894.	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
9	June 18, 1894.	"	Dr. L.	Carcinoma of ileum.	Resection, end-to-end.	"	2	—	—	Shock, 10 hrs.
10	June 18, 1894.	<i>M. J. G.</i> , June 1894.	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
11	June 18, 1894.	Not published.	Meyer, Willy.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
12	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
13	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
14	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
15	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
16	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
17	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
18	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
19	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
20	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
21	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
22	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
23	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
24	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
25	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
26	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
27	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
28	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
29	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
30	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
31	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
32	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
33	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
34	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
35	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
36	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
37	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
38	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
39	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
40	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
41	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
42	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
43	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
44	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
45	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
46	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
47	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
48	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
49	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.
50	June 18, 1894.	"	Dr. L.	Carcinoma of transverse colon.	Resection of transverse colon.	"	2	—	—	Shock, 10 hrs.

GASTRO-ENTEROSTOMY.

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Method.	Position.	RESULT.		Cause of death.	Remarks.
								R.	D.		
1	Mar. 5, 1894.	<i>Med. Week. Paris</i> , vol. ii, No. 38.	Quenu.	Epithelioma of stomach.	Gastro-jejunos-tomy.	Murphy button.	L.	1	...	...	Time for operation, 1 hour and 55 minutes. Uneventful recovery; up in 18 days; great increase in weight.
2	April 19, 1894.	Not published.	Bressler (Baltimore).	Obstruction of pylorus.	Gastro-jejunos-tomy.	"	"	1	...	...	Death 4 weeks later, exhaustion; button found at sigmoid flexure of colon retained by band of adhesion; no obstruction.
3	Aug. 13, 1894.	"	Mayo, W. J.	Carcinoma of pylorus.	"	"	"	1	...	...	Death 14 days after; broncho pneumonia; atropine; perfect union. Button liberated; opening about twice as large as button.
4	Aug. 1, 1894.	"	Mayo, W. J.	Malignant stricture of pylorus.	"	"	"	1	...	...	Rapid recovery; discharged August 25, 1894.
5	Aug. 1, 1894.	<i>Ann. Med. Surg. Jour.</i> , July, 1894.	Mynter, H.	Carcinoma of pylorus.	"	"	"	1	...	...	Patient still in hospital, doing well (September 6, 1894).
6	May, 1894.	"	Mynter, H.	Carcinoma of pylorus.	"	"	"	1	...	Exhaustion, 12 hrs.	...
7	"	"	Mynter, H.	Carcinoma of pylorus.	"	"	"	1	...	...	Smallest sized button used, which could not possibly grasp tissue and was never intended for that purpose. The wall of the stomach slipped out of its embrace and allowed contents to escape. A running stricture is not necessary if proper size button is used.
8	July 21, 1894.	"	Middleton, W. D.	Stricture of pylorus.	"	"	"	1	...	...	Uneventful convalescence; patient gained 45 pounds in week following operation.
9	"	"	Middleton, W. D.	Carcinoma of pylorus.	"	"	"	1	...	Exhaustion, 3d day.	Large-size button used; patient very weak and emaciated previous to operation, from constant vomiting. Post mortem revealed pronounced peritonitis about site of operation; stomach eroded by a great ulcer 3 inches in diameter; pancreas and other organs involved; approximation perfect.
10	Aug. 1, 1894.	"	Silver, H. M.	Carcinoma of pylorus.	"	"	"	1	...	Exhaustion, 8th day.	Button was still in position; method of its separation well illustrated.

CHOLECYSTODUODENOSTOMY FOR CHOLELITHIASIS.

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Method.	Position.	RESULT.		Cause of death.	Remarks.
								R.	D.		
1	Apr. 5, 1894.	<i>Ann. Med. Surg. Jour.</i> , July, 1894.	Mynter	Cholelithiasis; enlarged gall bladder.	Cholecystoduodenostomy.	Murphy button.	S. pos.	1	...	...	Rapid recovery; button passed 22d day; 126 gallstones.
2	March, 1894.	Not published.	Bradley, Peoria, Ill.	Obstruction of common duct.	"	"	"	1	...	Exhaustion, 7th day.	Post mortem; profuse hemorrhage from liver where it had been torn during operation in freeing adhesions; approximation perfect. Time for operation, 40 minutes. One hundred and fifty calculi; button passed 40 days after operation.
3	May, 1894.	"	Reber, Peoria, Ill.	Cholelithiasis; dilatation of gall bladder.	"	"	"	1	...	...	Excellent recovery.
4	June, 1894.	"	A. H. Ferguson.	Gallstones.	"	"	"	1	...	...	"
5	July 22, 1894.	"	A. H. Ferguson.	Gallstones.	"	"	"	1	...	...	"
6	Aug. 1, 1894.	"	A. H. Ferguson.	Gallstones.	"	"	"	1	...	...	"
7	Sept. 8, 1894.	"	Clayton Parkhill, G. C.	Gallstones.	"	"	"	1	...	...	Button passed 22d day; convalescence uneventful.
8	"	"	Brodie, J. B.	Cholelithiasis; obstructive.	"	"	"	1	...	...	Button passed 11th day; large calculus allowed to remain in cholecystus.
9	"	"	Brodie, J. B.	Cholelithiasis; obstruction of cysticus.	"	"	"	1	...	...	Time for operation, 50 minutes. Difficultly experienced in pressing large calculus from cystic duct back into gall bladder; calculus removed.
10	"	"	"	Obstruction of	"	"	"	1	...	...	Gall bladder found contracted to size of hazelnut, and stone half that size removed; obstruction due to fibroid degeneration along entire length of duct; smallest sized button used.
11	"	"	"	Cholelithiasis; obstruction of	"	"	"	1	...	...	Gallstone 8 lines in diameter impacted in cystic duct, removed through gall bladder, which was much dilated, full of mucus, no bile. Time for making anastomosis and removing calculus, 6 minutes. Time for anastomosis and operation, 16 minutes.

CHOLECYSTODUODENOSTOMY FOR MALIGNANT DISEASE.

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Method.	Position.	RESULT.		Cause of death.	Remarks.
								R.	D.		
1	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
2	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
3	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
4	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
5	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
6	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
7	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
8	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
9	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.
10	Aug. 1, 1894.	"	Mynter	Carcinoma of pylorus.	Gastro-jejunos-tomy.	Murphy button.	S. pos.	1	...	Prostration.	No peritonitis; perfect adhesion; multiple carcinoma of pancreas and liver.

SIDE-TO-SIDE ANASTOMOSIS.

No.	Date	Operation	Operator	Diagnosis	Operation	Mortality	Remarks
1	Aug. 16, 1894	Side-to-side	Meyer	Faecal fistula.	Ileo-colostomy.	Murphy S. to S.	1 ...

effected by the button. Some of these cases have not yet been reported. Of these patients, eighteen recovered and five died, giving a mortality of 21.5 per cent. and 78.5 per cent. of recoveries. If we add to these twenty-three cases thirty three others previously collected by Professor Murphy and published in the *Chicago Clinical Review* in June, 1894, in which thirty-two patients recovered and one died, we get a better result—a mortality of 6.9 per cent. and 93.1 per cent. of recoveries. But it must be borne in mind that in all probability many unsuccessful cases have not yet been placed on record. There were also collected eleven cases of gastro-enterostomy, in which seven patients recovered and four died—mortality, 36.3 per cent., and recoveries, 63.7 per cent.; eleven cases of cholecystoduodenostomy for cholelithiasis, in which ten patients recovered and one died—mortality, 9.1 per cent., recoveries, 90.9 per cent.; five cases of cholecystenterostomy for malignant disease, in which two patients died and three recovered—mortality, 40 per cent., and recoveries, 60 per cent.; and one case of lateral anastomosis, in which the patient recovered.

If now we add all of the cases, we get a grand total of eighty-four, of which seventy-one recovered and thirteen died—a mortality of 14 per cent. and recoveries 86 per cent. Of the deaths, two were due to hemorrhage, six to shock, two to intestinal obstruction, two to failure of the button, due to a wrong-sized button being used, and one to continued peritonitis. In the *Deutsche Medizinisch-Zeitung*, Berlin, May 25, 1893, Ramon von Barnez gives the mortality of intestinal anastomosis at 24.5 per cent.

Professor Murphy's Consideration of the Objections raised by Dr. W. W. to the Button.—The following was received from Dr. Murphy too late to be read at the meeting:

"The statement that the button is a foreign body in the intestinal tract, and may be retained, thereby rendering a secondary operation necessary for its removal, is true, and it has occurred, but not so much as some gentlemen at the case to which I believe the doctor refers, and some of the particulars of which I have learned indirectly. Why was the button retained, where was it retained, what was the nature of the case, and in how many cases has it occurred? Perhaps what I desire to know, when the case is properly presented, should be more: I should like to know in what hospital, upon what operation, in what position of the body, under what circumstances, where was the button retained, through the intestine, where was the opening of the button? Through the peritoneum and out of the body? Through the wall of the intestine? Between the peritoneal wall and peritoneum, still within the lumen of the intestine? If the latter be true, at the time of the primary operation, the button could be found with the contents of the intestinal tract, or else, the button and its contents

If, on the other hand, the fistula be closed after the button presents itself at the opening of the fistula, the contraction of the portion of the bowel which is rendered useless by anastomosis will force the button to the opening, and it will pass on with the contents. The button may be removed through the fistulous opening with proper and careful dilatation of the fistula, an operation which no surgeon would consider of grave importance. Again, it has been retained by a fibrous band in the hepatic flexure of the colon; it produced no symptoms of obstruction, but was found there post mortem. Another case in which it was retained was one of secondary carcinomatous growth of the sigmoid flexure, where anastomosis had been performed higher up; here also there were no symptoms of obstruction. There has not been reported to me, in the one hundred and thirty-six cases recorded as already operated with the button, a single case in which the symptoms of obstruction were produced by retention of the button, and only two reported in which the button was retained, also one of which I have heard indirectly. This would therefore appear to me to be a very small objection, and I can not consent to this objection being of sufficient importance to designate the instrument unsurgical.

"The second objection, that we depend on the craft of the cutter rather than on the skill of the surgeon, is not well taken. We might as well argue that we depend on the silk manufacturer for the silk used; we do, but the cautious surgeon tests his silk; he should also test his button. I have volunteered to examine the buttons for all of the manufacturers. I have sent models to all manufacturers who have requested them, and would gladly inspect, and do inspect, all buttons sent to me for that purpose. I have found a number of reliable instrument houses making perfect buttons. With this advantage, there is no conscientious surgeon justified in using a button unless he knows that it has been inspected or has been manufactured by some reliable house. There are defective buttons on the market; this I am powerless to avoid, as our ethics preclude me from purchasing a specimen of the button, without controlling its manufacture. I certainly do not believe that the fact that defective buttons have been manufactured is a valid argument against the use of the button. I congratulate the doctor on the result obtained in his experiment of placing peritonitis on a button. He will have to give me some of the details, and I have no doubt you will

Dr. W. W. to the Editor.

Changes of Address.—Dr. Frank E. Thompson, M. D., has been elected to the office of Dr. D. C. Lusk, and will practice at 100 N. 3rd St., St. Paul, Minn.

THREE CASES OF LARYNGEAL NEOPLASM.*

By CHARLES H. KNIGHT, M. D.,

NEW YORK.

LARYNGEAL growths are so rare in this country that it seems desirable that all cases observed should be placed on record. In this way we may hope to reach trustworthy conclusions as to the relative frequency, the diagnosis, and the best method of treating the several varieties of neoplasm. Two of the three cases which I have to report present little or nothing unusual. The first case, which might be properly denominated a process of degeneration rather than a neoplasm, is at least very exceptional. In a partial review of the literature of the subject no similar case has been discovered.

CASE I. Diffuse Subglottic Myxoma; Partial Removal by the Mouth with Mackenzie's Forceps; Tracheotomy and Radical Extirpation of the Growth through the Wound.—A. M'G., aged forty-eight years, first came under my observation at the Vanderbilt Clinic in the summer of 1890. For a year or more she had noticed increasing hoarseness and wheezy respiration, especially on exercise. She had some cough, with rather free expectoration. She supposed she had asthma. The general health had suffered somewhat in consequence of the disturbance of sleep at night, but no pulmonary lesion could be detected, and there was no indication of constitutional disease. The patient had the appearance of being a heavy drinker. She had a high grade of chronic pharyngitis and laryngitis, with considerable thickening of the mucous membrane, as is generally seen in the throats of alcoholics. In addition the laryngoscope disclosed masses of finely lobulated tissue extending from immediately beneath the vocal bands for an indefinite distance downward, completely encircling the air-tube and markedly diminishing its caliber. The patient was very intractable and for many weeks it was found unsafe and impossible to use endolaryngeal instruments. In the meantime the local irritation was relieved by moderate electrical stimulations and anæsthetic sprays. Finally Mackenzie's forceps with extra long blades (three inches from the angle to the tips) and cutting

action were employed. And within the hour and masses of the tumor were removed. Sections of the tissue were examined and the following facts were ascertained: The growth was made up chiefly of myxomatous tissue, and had a striking resemblance to the microscopic structure of the lesion itself. It is rather remarkable that the first report should have made it papilloma without reservation, while the latest examination is unable to discover any papillomatous tissue whatever. Either the tissue must have undergone a transformation, or the first examination must have been faulty. The latter conclusion is the only tenable one in view of the absence of all traces of papillomatous structure at present, and of the improbability of a change from papilloma to myxoma. In

order of frequency benign neoplasms of the larynx are merely enumerated as follows: papilloma, fibroma, cystoma, myxoma, adenoma, lipoma, angioma. Myxomata

layers of tissue were divided until the trachea was exposed. The bleeding having been controlled by pressure and torsion, the trachea was opened by section of its first three rings. The walls of the trachea being retracted, the morbid tissue was removed with cutting forceps and curette. The growth was found to involve the entire circumference of the windpipe from the under surface of the vocal bands to a point a half to three quarters of an inch below the lower limit of the wound. Hemorrhage from the tracheal wall was very moderate. The patient made no complaint of pain or special discomfort during the operation, and no difficulty whatever was experienced. A trachea tube was inserted and the wound sutured above and below it. The tube was removed on the third day. With the exception of a mild attack of bronchitis on the ninth day there was no unfavorable symptom. At the end of the third week the tracheal fistula had healed and the patient was discharged. Photomicrographs of sections of the tissue removed at this



A. M'G., August 1890. Subglottic myxoma.

operation have been made for me by Dr. Leaming and are here exhibited. The growth appears to be made up chiefly of myxomatous tissue, and has a striking resemblance under the microscope to the morbid condition so frequently met with at the posterior end of the inferior turbinate body. No structure typical of papilloma can be discovered.

The special points of interest to me in the foregoing case were: (1) The facility with which the trachea was opened and cleared with the aid of cocaine, and (2) the microscopic structure of the lesion itself. It is rather remarkable that the first report should have made it papilloma without reservation, while the latest examination is unable to discover any papillomatous tissue whatever. Either the tissue must have undergone a transformation, or the first examination must have been faulty. The latter conclusion is the only tenable one in view of the absence of all traces of papillomatous structure at present, and of the improbability of a change from papilloma to myxoma. In order of frequency benign neoplasms of the larynx are merely enumerated as follows: papilloma, fibroma, cystoma, myxoma, adenoma, lipoma, angioma. Myxomata

are generally pedunculated and form distinctly circumscribed, smooth, or lobulated tumors, but, as in my own case, the neoplasm may assume the form of a sessile myxomatous degeneration. In most of the cases reported their point of attachment has been one of the vocal bands, and of benign growths in general it may be said that they rarely invade the infraglottic region. As regards situation and form the foregoing case would seem to be extraordinary.

CASE II. *Pap. Inverted of the Larynx; Removal of the Mucous Membrane and the Submucous Tissue; Recovery; Recurrence of the Tumor at the Base of the Growth.* J. C. H. aged 36, married, 22 years, was sent to me by Dr. S. D. Powell on March 31, 1894. The history of the case is very brief and simple. The family record is quite free from taint. The patient himself has not been ill since childhood. During the spring of 1893 he noticed that his voice was getting weak. As he expresses it, he found himself unable to "holler." He has no recollection of ever having had a severe cold, but has long been in the habit of talking a great deal and in rather a loud tone of voice. He gradually became worse until in October, 1893, eight months ago, his voice completely left him, and since then he has been able to speak only in a whisper. His general health has been good. He has had no cough and no constitutional disturbance. With the mirror, an oblique light, and the finger, passed over the vocal bands, was seen to occupy the anterior third of the larynx above and between the vocal bands. A small tumor of epithelial or fibroplastic tissue, independent of the main tumor, projected from the right vocal band posteriorly. There was more or less diffuse hyperæmia, but the contour of the larynx in general was unchanged. There was no lesion of other parts of the upper air-passages aside from a moderate degree of chronic rhinopharyngitis. The patient was quite tolerant, and with the aid of cocaine no difficulty was found, on his second visit, in removing a piece of tumor with the Schröter-Tarek forceps. At a subsequent visit, on the fourth day, the Mankin suction forceps was used to much better advantage, until in two weeks all the growth had been removed from above the vocal bands, and the tumor was able to be removed from below. There remained below the right vocal band a strip of tissue to which a curved cauterizing electrode was applied without damaging the vocal bands. The patient was treated for a week with a solution of alumnol, twenty grains to an ounce. The patient was warned of the possibility of recurrence, and with instructions to return if the tumor should recur.

There are two points of interest in this case. (i) The rapid and complete restoration of vision after the pathological condition and (ii) the efficiency and safety of the electric sensory probe in providing a diagnosis before the visual function. The question also arises whether electrical sensory probes can be used apart from the limiting a methodology to measurement under the point of growth of the visual field.

Stage 10. Multiple Position of the Tongue. Associated with Beckwith's Tongue. Associated with Stage 9. Initial Position. Initial Movements and Sounds. The Uvula Goes Up. The patient puts a middle or forefinger, or even along thirty years of age in position (normal level). The only movement

complained of was loss of voice, which had been coming on for a year or more. The patient says that he gradually became conscious of something flapping up and down in his throat during forced respiration and on attempting to speak. He was a very intelligent and tolerant subject, and no difficulty was found in relieving him by means of Mackenzie's forceps of a neoplasm as large as a cherry stone which was attached to the right vocal band near the anterior commissure, and of a smaller one which sprang from the left ventricle. The voice was very much improved, but did not become entirely clear. A year later he returned, and the condition was found to be rather worse than at first. Several weeks were spent in clearing out the larynx, the growths having recurred at the original sites and a new growth having arisen from the right vocal band at about its middle. From this time there was no trouble, except occasional hoarseness, for nearly four years. In October, 1893, more than five years after the second operation, the patient came to me a third time, unable to speak with loud voice. The anterior commissure and the left ventricle were again the affected points. There had been no new developments, and the larynx in general looked better than on his second visit. A third time the larynx was freed with Mackenzie's forceps, especial attention being given to the ventricular neoplasm. Laryngeal sprays of alumol were used in this as in the preceding case after the final operation, and the patient states that he is now better than he has been at any time within the last six years. Dr. H. B. Douglass, one of the pathologists at the Manhattan Eye and Ear Hospital, has been kind enough to examine these several specimens and reports that the growth last removed, like the others, is a pure papilloma.

It is somewhat difficult to say what may be the causes of recurrence in certain cases of papilloma of the larynx. A continuance of the conditions—local, climatic, and hygienic—which originally favored the growth doubtless predisposes to relapse. It is probably true that some mucous membranes have an inherent tendency to proliferation or neoplastic development. Finally, the inaccessibility of certain neoplasms—for example, the ventricle, the anterior commissure, or the inner surface of a vocal band—may render complete removal impossible. It may be said. In this connection the question arises, When should we regard neoplasms as neoplasms and resort to an internal operation? Such a determination is one of the most difficult to be made, and the answer is, of course, not a uniformly one, but that of wisdom. The one factor, however, that should always be a deterrent to the choice of palliative measures without going down upon the neck has been the subject of much thought on the part of the several writers on all kinds of cancer, but especially with reference to carcinoma of the larynx. Should they be first palliated, and then removed by an external operation? It has been the usual practice to remove the tumor of the part if the best judgment of the nature of the thyroid surface should not be supplied, the tumor having been left alone. While he admits that there may be no trouble in young subjects the bulk of the growth may be controlled by such a procedure, and in some cases it may. The extension of benign growths of the larynx to a comparative degree of malignancy has been pointed out by some authorities, and may sometimes be a serious cause. The value of palliative transformation from a benign to

malignant character as a result of traumatism from repeated use of instruments seems to have been satisfactorily disproved. Finally, the introduction of cocaine may be said to have revolutionized intralaryngeal surgery. Operations that formerly would have been impossible may now be done with the greatest ease and deliberation. In view of these facts the conclusion seems to be justified that we may safely prolong attempts at removal of benign neoplasms by the natural passages to an indefinite extent.

147 WEST FIFTY-SEVENTH STREET.

OBSERVATIONS ON SOME OF THE RESULTS OF CUTTING OPERATIONS ON THE NASAL SÆPTUM.*

By THOMAS R. FRENCH, M.D.,

BROOKLYN.

THE few remarks which I have to make, which are presented with the hope of eliciting fruitful discussion more than for the purpose of contributing any special innovations, deal with facts which, for the most part at least, are recognized by the members of this association, but which, so far as I am aware, have not been presented for discussion. These remarks will be directed to a brief consideration of two conditions which may present as the result of cutting operations for the removal of spurs and thickened deflected septa—viz., perforations and membranous adhesions.

Perforations.—To rectify deviations of the cartilaginous septum without thickening, the advice usually given is to destroy the resiliency of the cartilage by cutting through it in various ways, fracturing the fragments, forcing them up to the median line, and holding them in position until healing has occurred. Although by the admirable operative methods suggested by Asch, Roberts, and Steele the best results are often obtained, it is nevertheless a fact that in some cases it is impossible to obtain sufficient relief by such means. By those methods the septum can not always be brought to a perfectly perpendicular plane, and unless it is, the greater air pressure on the concave side, together with the natural resiliency of the cartilage, not infrequently forces the septum further toward the narrow naris. This is particularly apt to be the case during the period of the greatest constructive activity, a period in which operations on the septum are most commonly demanded.

From a theoretical point of view, ulceration on one side of the septum does not necessarily perforate, so much through the septum as by a cutting instrument if the wound is protected from irritation, or when ulceration exists it may simply be made to heal and thereby no longer a source of trouble. On the other hand, on some occasions difficulty results from perforation; these cases are so exceptional that I will not attempt to say all of the conditions which have been described as leading to perforation, and, therefore,

an abundant supply of air through the nose. But is it a fact that ulceration never occurs when a perforation is made with a cutting instrument if the wound is protected from irritation, or that ulceration, when present, can readily be made to heal, or that external deformity never results from perforation of the cartilaginous septum? The danger of perforating is spoken of in almost all writings on operations on the septum, and it is the natural inference that it is the belief of the authors that ulceration or erosion is apt to follow perforation. Zuckerkandl* says that in the cases of healed perforation of the septum dissected by him the mucous membrane on the border of the hole was found to be very thin, and I presume that is generally if not always so; but this thin covering will, I believe, always be developed if the wound made in perforating the septum with a cutting instrument is carefully dressed and protected from irritation; but the patient not infrequently dislodges with his finger a few of the crusts formed in the process of repair, and ulceration is eventually produced, which in the course of time slowly progresses, filling the nasal passages with obstructing secretions and causing extensive destruction of the septum. Because of this danger I have thus far never perforated the septum unless reasonably certain that the edges could be adjusted so that an opening would not be left. I may have overestimated the danger of leaving a hole in the septum, but in the light of the evidence presented by a considerable number of cases falling under my observation of the destruction resulting from perforation, I have been constrained to avoid making one if a successful result can be obtained in any other way. I have seen a number of cases in which perforation has been deliberately made with the most satisfactory results, and many others in which the results were far from satisfactory; but in none of the latter had careful after-treatment been carried out. If it can be demonstrated that with proper surgical precautions and after-treatment the edges of a perforation can always be made to heal, I feel sure that we would all resort to this method of operating in certain cases as being altogether the surest way of obtaining permanent relief.

Perforation of the cartilaginous septum, as a result of a non-specific ulceration or erosion, is described in most modern text-books on diseases of the nose, and has been made the subject of a number of special articles; but this condition has been so little considered in its relation to septal operations that I desire to present for discussion a question which has frequently arisen in my mind—viz., If a successful result can not be obtained in any other way, are there not conditions under which perforation of the cartilaginous septum can be made a perfectly justifiable procedure?

Dehaven, in referring to Blandin's operation by means of the punch, says that "this procedure is eminently clumsy and unsurgical, and in reality is unjustifiable as being liable to do more harm than good."

* *Lehrbuch der Nasenheilkunde*, vol. 2, second edition, Vienna and Leipzig, 1900.

† *Practical Rhinology*, p. 25. N. Y. Medical Society, 1900.

Roe* condemns the use of the punch for the removal of the angular portions of a deflected septum. He asserts that "by its use we simply cut away a deformity which we should correct, and leave a hole through the septum in which crusts and secretions constantly accumulate, thus becoming a lasting source of irritation."

Lennox Browne,[†] in commenting upon Bosworth's statement that he had only once perforated a septum, remarks: "Looking moreover to the comparative frequency of septal perforations, unassociated with any dyscrasie, caries, or necrosis, and their non-liability in such circumstances to cause deformity—a point correctly insisted upon by Bosworth himself—one hardly sees why a perforation should be so much dreaded." Elsewhere in the same work he writes: "The entire closing of a perforation by healing process is unknown in my experience, and it is doubtful if such a happy result ever occurs; but spontaneous or induced arrest of the ulceration is the rule."

Bosworth,[†] in writing on perforations due to erosion, expresses his belief that their clinical significance is trivial, that they do not weaken the support of the nose to the extent of causing external deformity.

Greville Macdonald,²⁶ in writing on deflections of the septum, says: "Almost always, however, there is a certain amount of thickening in the cartilaginous septum, the paring down of which will generally prove sufficient for the removal of symptoms. Should there not be sufficient material for this, no objection can be raised to cutting off enough of the projecting angle with the saw, although we thereby make an opening into the other side. From such a procedure there is no risk of subsequent deformity to the nose."

McLennan is of the opinion that failure (1) of the nose does not occur. He mentions the case of a medical student in whom the cartilage was deficient from just within the nostrils almost if not quite to the dorsum of the nose. The tip of the nose was a little lowered, but no deformity could be said to exist.

Morell Mackenzie,⁴ in writing on traumatic rhinitis, says that "the lower and anterior part of the middle turbinate remains intact; the bridge of the nose never falls in, . . . although, when perforation has occurred, it has, in difficult to prevent the formation of a tolerably large hole in the septum; the nasal cavity is strictly confined to a small area, beyond which its ravages never extend. The use of simple sprays will soon restore the surrounding mucous membrane to a fairly healthy condition."

Before offering any suggestions to the courts to be pursued in the interests of ensuring a performance of the system due to individual initiative, we must first, however,

tience, and persistence are the only elements now necessary for the attainment of success."

Robinson,* in writing on hæmorrhage due to erosion or ulceration of the septum, asserts that a plan of very simple treatment, when persisted in, will bring about a complete cure in one or two months.

E. J. Moure,⁴ in discussing the value of electrolysis for the destruction of deviations and spurs of the nasal septum at the Eleventh International Medical Congress held in Rome last month, said that, in cases of marked deviation without thickening, he preferred a quickly made perforation, permitting the access of air into both nasal fossæ; and Ruault, at the same meeting, in referring to the possibility of perforation occurring as the result of the use of electrolysis, expressed the opinion that it was "absolutely immaterial; indeed, it is often necessary to seek it in place of endeavoring to avoid it, as this is the only rational intervention in cases of total lateral deviation."

It will be seen from the foregoing quotations from the writings of careful observers that there is no diversity of opinion regarding the danger of external deformity occurring as the result of perforation of the septum, that they are generally agreed that perforations due to erosion do not extend beyond the cartilage, and that, even after the destructive process has continued for a long period of time, it can be arrested, and the edges made to heal under appropriate treatment. The question is simply as to whether a perforation ever constitutes a morbid lesion unless subjected to mechanical irritation. I do not recall having seen a case of non specific perforation with unhealed edges in which the parts were not being subjected to irritation of some kind.

I am not aware that the presence of a perforation with healed edges is in any way harmful, even though it has considerable dimensions. A certain amount of catarrhal disease of the mucosa is usually present in these cases, but there is no evidence to prove that the perforation has any causative relation to it unless the edges have for a long time been the seat of ulceration. If, therefore, a perforation has occurred in any fixed area of the upper or lower dental arch, it is of the same importance only by a matter of a few millimetres in extent, and the same treatment is indicated.

After the strictest purification of a large number of cases, I am inclined to the belief that, with proper care in the after-treatment, perforation need be the accompanying condition without being met with great relief. It is usually a case of empty abscess. If the transudate, through the undrained duct, can get to the external without heating, it leads to the suppuration, suppurative, such a process is limited. If the pus gets into the lymphatics with the necessity of leaving the parathyroid, and if it is sufficiently various that the case can be successfully followed with the leading of the original pus secretion. Otherwise, I believe, in the presentable method of operation. I think, from the present state of the perforation made, that the treatment of the abscess, particularly in

* N. J. 1999. *Ornithological Monographs* 41:107, 1999.

† *Published by the Harvard and Yale Societies, 1900.*

* / *Journal of Management Education*, 2000, 24(1), 1-10.

Journal of the American Veterinary Medical Association

University of the West of England, Bristol

* *Journal of Science*, 1964, 15, 1070.

septum bent obliquely across one or both openings by the Blandin punch. This method of securing an increased supply of air is, it seems to me, a highly objectionable one for several reasons: (1) because of the irritation to the edges which is certain to be produced by the stream of air drawn through the opening; (2) because of the easy access of the finger to dislodge accumulated crusts; (3) even when the edges are healed, it is apt to give rise to a whistling sound, which is annoying to the patient as well as to others; and (4), while perhaps supplying a sufficient amount of air for respiration, it does not restore the normal function of the obstructed naris. I believe it is safe to say that, if a perforation is made in the septum of a subject free from dyscrasia, and the edges are not irritated, but rather subjected to careful antiseptic treatment, they will heal. Under such circumstances I believe that the procedure is safe, is justifiable, but under any other conditions it is to be condemned. The removal of the ban which has been placed on this method of operating to the extent which has just been indicated would, I feel sure, result in relief to a considerable number of cases which no other means now employed will effectively reach.

Large perforations increase the liability of fracture of the nose; but, if the edges are healed, that certainly is a preferable condition to the possession of a stout septum, if such can only be maintained at the expense of an obstructed naris. My contention, therefore, is this: that, in any case without dyscrasia in which it is known that the after-treatment can be thoroughly carried out, and the intelligence of the patient is sufficient to guarantee that the wound will not be subjected to mechanical irritation, there can be no objection to the removal of a portion of the cartilaginous septum for the relief of stenosis due to angular deflection without thickening, or to the septum being much too large for the bony framework of the nose.

I am well aware of the dangers associated with this teaching; that, if perforation of the septum is sanctioned, it will be greatly abused; but this does not alter the fact that if the osseous portion of the septum is not encroached upon and the after-treatment is all that it should be, greater relief can often be obtained from this procedure than can be afforded by any other method of operating.

Membranous Adhesions.—I do not doubt that you will agree with me when I say that one of the most common and annoying things in association with nasal surgery is the occurrence of adhesions between the nasal walls. That they are in the majority of cases the result of operations performed by unskillful hands is undoubtedly true, but that they occur and unfortunately often contracted and permanent by neglect of some operations and preventing skill and judgment prevail, is true.

In addition to the ordinary surgical knowledge, one needs an intimate knowledge of the structure of the nasal cavity, and the degree to which the various tissues are capable of contraction. It is with this knowledge that I believe I am able to operate with the least risk and with the least pain. When my attention is directed to a certain case, I am able to determine the degree to which the various tissues are capable of contraction, and in a few weeks' time to be able to determine the degree to which the various tissues are capable of contraction, and in a few weeks' time to be able to determine the degree to which the various tissues are capable of contraction.

sions binding the walls of the passage together. Such cases reflect discredit upon the operator, and certainly in most cases the reflection is just and proper, for a want of care in operating is no doubt the commonest cause of adhesions; but there are cases in which the exercise of the utmost skill and care would seem to be insufficient to prevent their occurrence.

It is, I think, generally agreed that adhesions do not occur after operating on the turbinated bodies unless that part of the septum lying directly opposite has been injured; and that they do not occur after cutting operations on the septum unless the turbinated tissue opposite the wound has been broken during the operation, or has recently been subjected to some operative procedure, the wound from which has not completely healed; in other words, that adhesions can not occur after operating on either wall of the naris if the mucous membrane on the opposite side is intact. The sides of a nasal passage may be brought into contact after removal of redundant cartilage by the collapse of the outer wall, or by turgescence of the turbinated structure opposite as the result of irritation from the wound on the septum, thus causing contact for a varying length of time. It is during this period in such cases that adhesions occur if there is a solution of continuity on both walls at points lying directly opposite each other; but if the mucous membrane on one wall is unbroken and smooth, adhesions will not take place no matter how much swelling there may be or how long the parts remain in contact during the process of repair.

Occasionally the results of operations on the septum performed by careful surgeons look like bungling attempts to secure relief, for, after the parts are healed, a portion of the opposite wall is found to have become adherent to the wound, and the condition of the patient is worse than that for which the operation was originally performed, and yet the operator may feel certain that the opposite wall had not been injured by his instruments or been the seat of recent treatment of any kind. I believe that many such cases can be explained by a fact which seems to have been overlooked, and has apparently been proved by my experience in a number of cases—viz., that cut surfaces on the septum will become adherent to scar tissue on the turbinates made by the galvano-cautery at some previous time. My meaning may perhaps be made clearer by referring to the cases of three patients quite recently under my care for relief of nasal stenosis and in whom adhesions followed operation on the septum.

I was asked to operate in the late spring for the removal of an overgrowth of cartilage in a very narrow nasal passage of a young lady whose inferior turbinates had been considerably reduced in size by the aid of the galvano-cautery point several months before. I removed the redundant cartilage with the saw and immediately afterward the patient left town for the summer. When she reported again in the autumn I found a long and narrow bridge across the naris corresponding in length and width to the wound which I had made in removing the cartilage. As during the former operation the greatest care was taken to prevent adhesion to the opposite wall, I could find no other

explanation for the adhesions than that they had occurred between the cut surface of the septum and the surface of the inferior turbinated body made rough and uneven by the previous application of the galvano cautery.

In another case in which an operation of a similar character was performed in the late spring, and in which equal care was taken to avoid injury to the opposite wall, adhesions occurred during the summer, and I am convinced that they were not due to injury of the turbinated tissue during the operation. I had advised the removal of a large spur on the septum of this patient a year before, but as she objected to a cutting operation at that time I contented myself by destroying with the galvano-cautery a considerable amount of hypertrophied turbinated tissue lying opposite the portion of the cartilage which was removed a year later. I am unable to find any other explanation for the adhesions in this case than that the scar tissue resulting from the galvano-cautery incisions formed a good surface for the granulations of the septal wound to become attached to.

In still another case, operated upon for the removal of an echondroma, just before the summer vacation, quite extensive adhesions were found to be present in the autumn. In this case applications of the galvano-cautery had been made to the turbinated tissue in the same naris by another physician some months before she came under my care.

What the characteristics of cicatrices produced by the galvano-cautery on turbinated tissue are, that render them liable to become engaged in the process of repair of a wound in contact with them, I am unable to say. The microscope will, no doubt, assist in making this plain, and I regret that I have not had an opportunity to make such an investigation. It is more than likely that their liability to become attached to cut surfaces depends largely upon the character and extent of the burned surface of the turbinates—that is, whether the scar is the result of a wound made by incisions with the edge or point of a loop, or by a flat burner.

If my deductions, in regard to the liability of adhesions occurring between cut surfaces on the septum and cicatrices on the turbinated tissue resulting from the use of the galvano cautery knife, are correct, then in patients who present themselves for treatment, whose noses have never been subjected to operative procedure, and in whom there is need of the destruction of hypertrophied tissue and removal of obstructing cartilage or tumor the septum should be operated upon first, when, after a suitable time has elapsed and it is certain that the mucous membrane is completely restored, the turbinates can be safely destroyed by any method. It is, however, not infrequently the case, particularly about the cutting question on the septum, that any effort to remove the obstructive material of the turbinated hypertrophy, and even should it refer to the use of the snare or snare, or snare and cautery, is liable to leave a surface which might become adherent to a wound opposite in the event of a cutting operation on the septum being performed later. In all cases reporting cutting operations on the septum, inquiry should be made to determine whether the galvano-cautery has

been used on the turbinated body opposite. If it has been, it is advisable to keep the wound under observation for at least two or three weeks in order to prevent adhesions, should a tendency to their formation be shown.

Without doubt adhesions are frequently occasioned by saws with unprotected ends, and the unskillful use of trephines and cutting forceps in narrow passages. A distinct advance will be made when all instruments used for septal operations are constructed with a view to preventing the possibility of wounding the outer wall of the naris. I believe that severe hemorrhages following cutting operations on the septum are not uncommonly due to injury of turbinated tissue, and a pointed saw seems to be peculiarly adapted to insure injury in a narrow passage.

An error which experience has taught me is that of cutting outward with the saw at the floor of a narrow naris in finishing a section from above downward. Injury of the inferior turbinated body is apt to be produced in this way and result in adhesion of the sides at, or just above, the floor, which not only cuts off a part of the breath-way but interferes with proper nasal drainage.

In my opinion the upward cut ought always to be made first in dealing with large spurs or deflections, for, if the section is begun above, the lower portion of the part to be removed is almost instantly obscured from view by the blood clots which form on the floor of the naris. This remark is especially applicable to sawing operations performed while the patient is under the influence of ether. If a septal projection is removed by cutting entirely in one direction, a ridge is not uncommonly left at the edge of the wound which necessitates further operative interference to eradicate. It is a good rule, in operating with the saw, to begin the section by cutting upward, and finish it by cutting downward; but whether it is begun from above or below, the section should be finished by a cut from the opposite direction, for in this way the maximum amount of tissue can be removed from the septum with the least danger of injury being done to the outer wall.

SINGERS' NODES.*

By FRANKLIN J. KNIGHT, M.D.,

Chicago.

The affection of which I wish to use a few words here, as I have seen it of several years' standing, is situated on the edge of one or both vocal cords at about the junction of the anterior and middle thirds and can usually be easily stated to correspond to the anterior end of the vocal cord. It has been described by me in the conditions found in chronic laryngitis, but also as "granules of the vocal cord" and "nodules" (Lipscomb). It has been known to have been pointed out by the patient as a "growth," with or without subsequent general laryngitis. I described a case as "thickened" in the *Journal of Laryngology* for 1893. The case of Turk who appeared the following year

* Read before the American Laryngological Association at its annual meeting, 1893.

† *Transactions of the New York Laryngological Society*, 1893.

sented multiple granulations not only on the edge but on the upper surface of the cords, and the name seems most appropriate for these cases. The single nodule on one or both cords, although it may be pathologically the same, constitutes clinically a distinct affection, and is, I think, entitled to a separate designation. Whether the term "chorditis tuberosa," which Dr. Rice adopts, is entirely satisfactory is doubtful, as there may be little or no chorditis, and this term has been also unfortunately applied to the diffuse form. Singer's node is not exactly appropriate, because the subject, though usually, is not always a singer. To be exact, we can only at present say that we find a node on the vocal cord in the above-mentioned site. This is usually whitish or yellowish-white in appearance, of the size of a millet seed or larger. There may be a depression in the edge of the opposite cord in the corresponding spot, or a little nodule here also. The mucous membrane of the adjacent parts of the cord may show signs of inflammatory action, but in the beginning this is often absent. The cause of this condition will almost always be found to be strain or wrong use of the voice in singing or speaking. It is said that friction of the edges of the cords is greatest at this point, hence the pathological change. The nature of this development has been but little studied histologically. Kanthack* examined three specimens from Krause's clinic, and found in one a simple local hyperplasia; in the second, cornification; and in the third, such a growth as comes from chronic irritation. No glands or vestiges of such were found.

The examinations were made on account of a statement by B. Fraenkel that these nodes were of glandular origin. Kanthack also examined twenty larynges, and found no glands in the vocal cords.

Rice had sections examined from two nodules which he removed from the vocal cord by a small snap guillotine, and the result in both cases was connective tissue and epithelial elements in largely increased numbers. M. Sabrazes and M. Freche† report on the microscopic examination of three specimens, that they are to be considered as circumscribed hypertrophies of the epithelium and chorion of the mucous membrane. Sometimes the thickening of the epithelium predominates, sometimes it is rather the papillary prolongations of the chorion; mostly both participate in the hypertrophy. Wedl‡ made an examination of post-mortem sections of a "trachomatous" vocal cord in a patient of Türk, and found only hypertrophied connective tissue and proliferation of nuclei. This patient had the diffuse granular condition of both cords. She died of tuberculosis. It will be noted that histologically the nodules were of the same character as the tubercles and which we are discussing.

The symptoms produced by these little nodes vary from slight hoarseness to complete loss of voice. In no latter case does it usually constitute the source of difficulty, or prevent the voice.

The treatment proposed chiefly for the removal of the

condition, and the ability and willingness of the patient to carry out instructions. When seen early, and the patient is able to rest the voice, the prognosis is, in my experience, good; but if the patient is obliged to use the voice, especially if his method is wrong, it is serious, and under these circumstances the growth will probably continue and gradually increase, leading to the various secondary conditions, and, as in the case of all such developments, the older it is the harder is it to cause absorption or get a good result from operation.

The treatment of these nodules must vary with their size and form. Those which I have seen have been so small and sessile, so thoroughly incorporated with the cord, that any operative procedure seemed inadvisable, not only on account of the difficulty of extirpating the growth, but for fear of injuring the vocal cord. Sabrazes and Freche state that the nodule may be pediculated, in which case the operation would be comparatively trivial. I have never seen such, and should doubt their identity with the kind I have described. I should have hesitated to cut into the vocal cord in any of the cases I have seen, unless the voice seemed ruined forever, as it was, and this gave the only hope, for the integrity of the singing voice depends on the integrity of the edge of the vocal cord. In the few comments published on the treatment of this condition there has been a great confusion of this and the diffused trachoma of Türk, from which it must be distinguished, notably in the discussion at Baltimore on Dr. Rice's paper. Dr. Rice himself, in the illustration of his article and in his remarks on treatment, evidently had in mind the single nodule on the edge of one or both cords, but at the beginning of the article he says that Türk's description of this condition is comprehensive, whereas Türk describes only the diffused condition occurring on the surface as well as edge of the vocal cord. Dr. Westbrook describes a nodule on the vocal cord of one of his patients growing from the vocal process forward. Dr. Daly said that the condition was not uncommon in tuberculous families, evidently referring to a diffuse granular condition of the cords. Dr. Delavan spoke of the recommendation of forcing a probang covered with cotton through the glottis in the hope that the granulations might thus be scraped away, and that he had not found this method a success. This method was suggested by Voltolini for papillomata, which are often friable, but I can not conceive how any one could recommend it for the hard, closely incorporated nodule such as I have described. Neither should I expect to accomplish anything in this form but irritation—by scraping with the finger nail—as done in one case by Dr. Daly, even if I could reach the vocal cord. The epiglottis and tips of the cartilages of Santorini are as far as I can reach with my forefinger in most cases, and the vocal cords are considerably further off.

Dr. John N. Mackenzie said we should distinguish between a mere granular condition and the genuine chorditis tuberosa, evidently meaning by this latter term the diffuse form, as he says the whole cord is converted into a band like a granular lob, and is usually inextensible.

In my cases so far I have found that by rest and as-

* *Journal of the Laryngological Society*, 1890, vol. 10, p. 100.

† *Ibid.*, 1891, p. 100.

‡ *Opus. Klin. u. Anat.*, 1890, p. 100.

tringents, if there was also inflammation of the surrounding mucous membrane, the voice has been so far restored that I did not feel justified in risking cutting operations; but if after this treatment there was still no useful voice, I should not hesitate to employ Dr. Rice's guillotine and remove the protruding portion of the growth, if it could be engaged, hoping that the remainder would be more readily absorbed. I have not been able, from Dr. Rice's published paper or his remarks in the discussion, to find out just how much of a voice the patients whose nodules he excised ever acquired after the operation. Neither have I been able to learn how the nodules were removed nor the resulting condition of the voice in the cases of MM. Sabrazes and Frehele (Lichtwitz's clinic) nor in the cases of Kanthack (Krause's clinic).

The object of this brief paper is, first, to call attention to the imperfect nomenclature of this affection, and to recommend the abandonment of the term "tracheoma of the vocal cord" for the form of the affection which I have described, and the restriction to that form of the term "chorditis tuberosa," if it should seem best to retain it; and in the second place to elicit reports of operations on single nodules (unilateral or bilateral) situated as I have described, and especially the effect of their excision on the singing voice.

The Prize of the American Neurological Association.—

The association offers a prize of two hundred dollars for the best essay on any subject connected with neurological science. This competition is open to physicians who are legal residents of States in North and South America. Essays must be sent to the secretary of the association, Dr. Graeme M. Hammond, on or before the tenth day of May, 1895. Each essay shall be accompanied by a sealed envelope containing the name and addresses of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay. Essays shall be typewritten, in either the English or French language, and with the pages securely fastened. The council of the association reserves the right to reject any or all essays judged unworthy of the award. Each essay must exhibit original research, and none will be accepted that has previously been published.

The Babies' Hospital.—The new building was inspected by an invited company on Saturday afternoon, November 24th. Addresses by Bishop Potter and Dr. Jacobi were announced.

Mercurialized Traumaticine in Syphilia.—Traumaticine.

A few persons have been known to purchase the Alabaster and have employed the Dry Process, at Tunis, and a very good result has been the outcome, the appearance of the work is excellent. He who tries this method of the removal of tumours, and after the patient has had a bath the separate portions of the tumour are painted over with the liquid. If there are none, the back is painted all over, and when the chloroform has evaporated the skin is left coated with a mercurial varnish which adheres closely. This treatment is repeated twice during a week and the growths are removed. The patient is then washed with soap and water, and the separate portions of the tumour may be separated in three or four weeks at a time. All young persons afflicted can be treated in this manner, but it is not so good as the one, since the external administration of mercury will then transmit the disease to very valuable tissue. It has been found especially by the use of mercury with young people and to be the cause of the disease.

NEW YORK MEDICAL JOURNAL.

A Weekly Review of Medicine.

Prepared by
[D] APPLICATION No.

Edited by
FRANK F. FURBER, M.D.

NEW YORK, SATURDAY, DECEMBER 1, 1894.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION

THE association's twentieth annual meeting, held in Hot Springs, Arkansas, last week, was an event well calculated to make a deep impression on those in attendance, whether members or visitors. This impression would rest partly on the character of the meeting itself and partly on the abundant evidence displayed of a sympathy and cordiality between the medical profession and the people at large in the Southwest that, we fear, one would fail to find in the Eastern and Middle States. Then, too, unusual devotion to professional progress was shown by the presence of many a practitioner from remote districts who had gone through great difficulties to get to the place of meeting.

Concerning the meeting itself, it must be remarked in the first place that the programme was one of exceptional interest. It was so full, indeed, that a person visiting the association for the first time, and therefore unaccustomed to its ways, might well have doubted the possibility of getting through with it; but justice was done to it, thanks to the association's excellent rules stated to the participants, and themselves with which the president enforced them—moreover, time was found for the reading of more than one paper that was not down on the programme, although the submission of papers had to take by necessity of short intervals' absence was made by means of what is ordinarily observed at a meeting of the sort. As to the character of the papers, it was fairly heavy and discussion treatment. There were not one that was not historical and many of them far more. It must, then, be noted that the meeting was of unusual historical value.

Throughout that we have continued to find striking examples across the medical profession and the community in general throughout the Southwestern as the numerous cases of discrimination continues and in the Southwest there has been enough of that across various agencies. One of I still find and that thought. Power and that and in Southern and Northern community has been established. In the case that, however by (understanding the social hierarchy) may could be revealed as the reality was not not get into that area as you go into the area of meeting that the best way to reach from those groups (cases of discrimination) and more. Several groups are in the area and being helped by groups. The network by which could be used in getting information in 1990 (during the meeting conference). Furthermore, that the University program of July 1990 by the conference that had been made the Union of people who have the power in the Southwest have and worked and have been involved in the Southwest. I believe that the South

MINOR PARAGRAPHS.

THE TREATMENT OF THE VOMITING OF GASTRIC JAS BY OXYGEN INHALATIONS AND A DRY REGIME.

Is a recently published statement Dr. Milton K. ... calls attention to the value of oxygen inhalations in the treatment of the stubborn vomiting of gastric dilatation. He administers from thirty to fifty litres of oxygen daily, and at each meal one hundred and fifty grammes of hashed meat, two ounces of potato or potatoes, three (three and a half) and a half of water. This treatment has seemed to exercise a calumative action and produce a certain sedative influence on the gastric reflexes in a very short time, and the author recommends its use as preferable to that of any other therapeutic measure.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 27, 1894:

DISEASES.	Week ending Nov. 20.		Week ending Nov. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	49	6	24	4
Scarlet fever.....	90	4	87	5
Cerebrospinal meningitis..	11	1	1	1
Measles.....	46	2	48	4
Diphtheria.....	168	23	189	37
Small pox.....	0	0	2	0
Tuberculosis.....	80	90	108	113

The Mississippi Valley Medical Association.—At the recent annual meeting, held in Hot Springs, Arkansas, officers for the ensuing year were chosen as follows: President, Dr. William N. Wishard, of Indianapolis; vice-presidents, Dr. Thomas E. Holland, of Hot Springs, and Dr. Charles B. Parker, of Cleveland; secretary, Dr. Frederick C. Woodburn, of Indianapolis; treasurer, Dr. Harold N. Moyer, of Chicago. It was voted to hold the next meeting in Detroit.

The Woman's Hospital.—It is announced that land on Eighth Avenue constituting the block extending from Ninety-second to Ninety-third Street has been secured for the purpose of erecting new buildings for the hospital.

Army Intelligence.—Circular Letter of the Surgeon General, Division of Office, regarding the Medical Department, United States Army, from November 19 to December 10, 1894. Prescribes changes in uniform and equipment. The Medical Department is to be organized in three divisions: 1. The Medical Department, 2. The Medical Department, 3. The Medical Department. The Medical Department is to be organized in three divisions: 1. The Medical Department, 2. The Medical Department, 3. The Medical Department.

Naval Intelligence.—Circular Letter of the Surgeon General, Division of Office, regarding the Medical Department, United States Navy, from November 19 to December 10, 1894. Prescribes changes in uniform and equipment.

Public Health.—Circular Letter of the Surgeon General, Division of Office, regarding the Medical Department, United States Army, from November 19 to December 10, 1894. Prescribes changes in uniform and equipment.

Public Health.—Circular Letter of the Surgeon General, Division of Office, regarding the Medical Department, United States Army, from November 19 to December 10, 1894. Prescribes changes in uniform and equipment.

Public Health.—Circular Letter of the Surgeon General, Division of Office, regarding the Medical Department, United States Army, from November 19 to December 10, 1894. Prescribes changes in uniform and equipment.

Society Meetings for the Coming Week:

MONDAY, December 3d: New York Academy of Medicine (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Cornell N. Y. Academy of Medicine; New York Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

TUESDAY, December 4th: New York Obstetrical Society (private); New York Neurological Society; Buffalo, N. Y., Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Herkimer (semi-annual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, December 5th: New York Academy of Medicine (Section in Public Health); Society of the Alumni of Bellevue Hospital, New York; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, December 6th: New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medical Psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, December 7th: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, December 8th: Obstetrical Society of Boston (private).

Answers to Correspondents:

No. 1. To the question regarding the cause of the tuberculin. 2. We think it can not be obtained.

Proceedings of Societies.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The meeting of the Medical Association of the Mississippi Valley, held at Hot Springs, Arkansas, on November 19 to December 10, 1894. The meeting was held at the Hotel Hot Springs, Arkansas. The meeting was held at the Hotel Hot Springs, Arkansas. The meeting was held at the Hotel Hot Springs, Arkansas.

THE PRESIDENT, DR. WILLIAM N. WISHARD, OF INDIANAPOLIS.

The President's Address.—After a brief address of welcome to the members of the Association, the President, Dr. William N. Wishard, of Indianapolis, made an address on the "Medical Department of the United States Army." He spoke of the importance of the Medical Department in the United States Army, and of the need for a more efficient organization. He spoke of the importance of the Medical Department in the United States Army, and of the need for a more efficient organization. He spoke of the importance of the Medical Department in the United States Army, and of the need for a more efficient organization.

a general feeling of resentment, as was abundantly shown in the discussion. That portion of Dr. Woodbridge's present paper which he read at first under the time limitations of the rules of the meeting consisted almost wholly of clinical histories. The treatment on which he had particularly relied was by the internal administration of antiseptics.

In the discussion, in which many gentlemen took part, notably Dr. I. N. Love, of St. Louis, the general opinion was expressed that there was no specific treatment that could be relied on to cut short the course of typhoid fever or that furnished any guarantee of its successful issue, also that a physician might encounter several epidemics without losing a patient, but finally meet with one that would prove so fatal as to wean him from any notion he might have come to entertain that he had mastered the treatment of the disease.

Dr. WOODBRIDGE had not proceeded far in closing the discussion when he was peremptorily asked if he would describe his special treatment definitely. He answered "No," whereupon plain expressions of disapproval arose. After a little pause Dr. Woodbridge recurred to his paper and read passages from which it appeared that he relied on two mixtures of menthol, guaiacol, and several other antiseptics. It was remarked by several members that there was nothing new in the treatment, and the subject was dropped.

Ox-gall in the Treatment of Typhoid Fever.—This was the subject of a paper read by Dr. HENRY SUMMA, of St. Louis. It consisted largely of clinical histories. Together with the ordinary symptomatic treatment, the use of ox-gall had consisted in its administration in the form of an enema once or twice a day.

The paper was discussed conjointly with Dr. Woodbridge's. Dr. Love stated that he had observed the good results in Dr. Summer's cases.

Urinalysis in Diagnosis. Dr A. E. WATKINS, of Canton, Ohio, read a paper in which he showed anew the importance of urinary examinations in the diagnosis of various acute and chronic diseases.

Analyses in the Diagnosis of Chronic Diseases was the title of a paper of much the same purport by Dr. PAUL PIERCE, of St. Louis.

My Experience with Gold as a Therapeutic Agent was the title of a paper by Dr. A. M. OWEN, of Evansville, Ind. (to be published).

Toxics.—Under this brief title Dr. WILLIAM F. BARKLEY, of Pittsburgh, dealt with various pathogenic agents that might be ingested accidentally or be generated within the organism. Incidentally, he remarked that it was his opinion that bloodletting and saline cathartics are expressions of a view that has to be reconsidered, at least after its comparison with experience. In cases where the blood was rich and abundant, but overcharged with toxic material, such as the case of the homicidal

© 2000 Blackwell Science Ltd

AMERICAN JOURNAL OF MATHEMATICS 1901, VOL. 23, NO. 1, PP. 1-100.

Optically Isolated Compounds, *Ann. N.Y. Acad. Sci.*, 195, 100, 1964.
 Hydroxylation of *Phenanthrene*, and *Phenanthrene*, *May 19, 1964*, 11 and
 12, 1964.

The President, Dr. D. Thomson DUNCAN, of West Wall, 10 The
Flats

Observations on Some of the Results of Cutting Operations on the Nasal Septum.—A general review of the literature on this subject by Dr. THOMAS H. FRANKS, of London. (1904.)

Dr. W. H. Bosworth said he wished to speak on but one point—that of perforation of the nasal septum. He had operated in quite a number of cases, and thought perforation had no weakening effect on the cartilages of the nose. If the edges of the perforation projected into the ingoing current of air, there was liable to be erosion. If we could secure such a position, so that the perforation was in an antero-posterior line, there would be no projecting edges, and the patient would be perfectly safe from any discomfort or erosion. The hemorrhages could usually be controlled by the use of the cautery.

Dr. JOHN O. ROE, of Rochester, said: I do not regard the perforation of the septum in adults as a serious accident, because the supporting structures of the nose are developed and will maintain their position. But in children, where the nasal structures are imperfectly developed and still in the process of growth, perforation of the septum is quite liable to cause a falling in or depression of the top of the nose, and particularly in the cartilaginous portion. In performing operations upon the septum the accident of perforating it will sometimes occur, particularly if great care is not exercised; but the intentional perforation of the septum, because it is deviated or deformed, should never be resorted to, and is, in my opinion, entirely unjustifiable. I regard it as bad surgery, for we thus resort to cutting away a deformity which we should correct. At the last meeting of this association I described the plan which I pursued in the correction of deviations of the septum, and also described the instruments which I had some time before devised for this purpose. The instruments which I then described I have since improved and perfected, a set of which I have brought with me for your inspection. They are, as you see, made in different sizes to fit different cases, and so arranged that all the blades fit into one handle. The screw in the handle permits the adjustment of the blades, so that the exact amount of force required can be employed, and in the employment of the cutting blades for straightening the cartilaginous portion they can be so adjusted as not to cut through the mucous membrane on one side, which, being preserved, serves the purpose of a splint to hold the fragments together until healing ensues. In the employment of these instruments the danger of perforating the septum during the operation of straightening it is removed, and the ease with which the operation can be performed will, I am sure, commend these instruments to you.

Dr. WILLIAM H. DALY said he was of the opinion that in the discussion of this subject perforation of the nasal septum should never be mentioned except to condemn it; we should condemn it as it is. He said that he had read in this opinion when the first paper on this subject was read (1875) and that he had been very much surprised to find that Dr. H. (Dr. H. H.) had found no valid reason for changing his views. The old saying, "As the twig is bent the tree is inclined," found a striking proof in cases of deviation of the

[illegible]

The speaker said that he had recently had an opportunity of examining several cases in which the septum had been entirely removed, the shape of the nose remaining the same after the operation as it had been before.

Experience had taught him that there was a period in childhood when growths on the septum are progressive. This was about the age of puberty. Such cases when operated upon would almost invariably require a second operation at a later date.

Dr. Brown thought it was seldom necessary to perforate the septum in operations on that partition. In one case, however, the defect was such that he felt it was imperative, inasmuch as the perforation was the trachea. The relief in this case was greater than he had reason to expect.

The PRESIDENT considered it very important that all injury, both to the septum and to the parts adjacent to it, be avoided in this class of operations. It was possible that a small, round perforation, such as that made by a Blandin's punch, might not be harmful. Perforation occurring in the course of the removal of a longitudinal banding of the septum, causing the blood to take a spur, was not likely to result in a small, circular opening; however, but in a long, narrow slit, running parallel with the floor of the nose and unlimited in extent. In a young lady whom he had lately seen, an opening an inch and a half in its antero-posterior diameter had been made. While the effect of such a loss of tissue upon the blood-vessels of the septum might not be irremediable, the speaker regarded the division of a large number of filaments of the naso-palatine nerve as a very serious matter. In his own practice he had perforated the septum on but two occasions. The patients were both gentlemen. In the younger the accident was followed immediately by midriasis of the right eye. In both there was pronounced and long continued nervous irritation, while the nasal obstruction was but imperfectly relieved. The same conditions had existed in the case of the young lady mentioned. He had seen other cases similar to the above, and had never failed to find that more harm had resulted therefrom. He therefore seriously cautioned against any such procedure, and believed that instruments like the Blandin punch, if employed at all, should be used with the extreme care and judgment. His remarks induced some discussion, expressed by Dr. Langmead as to the importance of careful after-treatment. Mr. A. J. Williams suggested the following plan: "The patient should be kept in bed for three or four days. The nose should be irrigated with warm water every hour. The nostrils should be closed with cotton wool, and the head elevated. If the patient complains of pain, morphine may be given. The diet should be light and nourishing." The President thanked him.

[illegible]

certain that the results obtained from such operative procedures would be far more satisfactory to both patient and operator.

It seems to me that this discussion has shown that while an unnecessary perforation is always to be most carefully avoided, with proper care the occurrence of a perforation need not be greatly dreaded.

Singers' Nodes.—Dr. F. I. KNIGHT, of Boston, read a paper on this subject. (See page 181.)

Dr. GLEITSMANN had used the galvano-cautery in these conditions, and had been well satisfied with the result. He also advocated chronic and trichloroacetic acid.

Dr. S. W. LANGMUIR said he believed destruction of the nodule was the proper procedure. It was to be regarded as a tumor. There was great danger of recurring chondritis in these cases, for which rest and topical medication were the remedies. In his opinion unskillful use of the voice and prolonged vocal efforts predisposed to this condition. He had seen these nodules on the vocal cords of singers whose voices were still beautiful, but in such cases the nodule did not extend to the free border of the cord. If it did, the singing voice was necessarily injured or destroyed. He had never seen the nodule removed except by forceps.

Dr. T. M. MURRAY said he had seen four cases of singers' nodes. The first was in Vienna, and was treated by Professor Stoerk. The result was good. The next time he saw such a case he tried Stoerk's method himself, and was much pleased with the result. The operation consisted in simply touching the spot once with nitrate of silver fused upon a silver laryngeal probe. The patient should not speak once for twenty-four hours after the application. One of his cases was a child of seven years. One, an actress whom he had treated in this manner, retained her voice completely.

Dr. J. Whigitt said he could indorse the statement made by Dr. Langmaid concerning chondritis. In some cases the cords looked as if they were powdered at their middle. In these cases the nodule disappeared by an application of nitrate of silver or other metallic astringent. In one of his cases the condition disappeared spontaneously. He had never used the guillotine and forceps, and he thought in the majority of cases a mild solution of nitrate of silver would suffice. In exceptional instances there seemed to be a diathesis, particularly among phthisical patients. He would like to hear from others as to whether there usually was any association of these conditions.

Dr. FIENICH said that he had had an opportunity to treat quite a number of cases of the disease which Dr. Knight so well described, and had been impressed with the value of local applications of astringent and alterative remedies in those cases.

astringent and alterative remedies, which were applied on an average of three times a week for two years and a half, when the vocal band regained its normal appearance and her singing voice was completely restored. She was now singing in a quartet choir, and her friends thought that her voice was as brilliant in quality as it ever had been.

Surgical measures were but seldom indicated in these cases. Certainly in those in which the vocal band was thickened such measures could be of no avail. The existence of a condition which would be benefited by the use of the little guillotine described by Dr. Rice must be very rare.

In his opinion there was no relation between tuberculosis and the disease under consideration.

Dr. W. K. SIMPSON, of New York, said the development of singers' nodes depended not so much on the wrong method of using the voice as on its immoderate use by whatever method. He did not think they were necessarily tubercular, but a tubercular subject would be more disposed to their formation. They sometimes began by slight hemorrhages which became organized. The main point of treatment was rest.

The PRESIDENT said he had never found any connection between the condition under discussion and the tubercular diathesis. Surgical treatment was appropriate only for those cases in which the nodes were of considerable size. He had treated many of these cases by local applications, and had obtained as good results as from surgical measures. One such patient had been under his observation for ten years. In her there were nodes in the middle of both vocal bands. She received local treatment for a year and a half, and was then put under the care of a good musical instructor. The nodes never entirely disappeared, but she had steadily improved in her singing, and had been promoted to one of the best professional positions in the city, singing acceptably in church, concert, and oratorio.

Dr. F. I. KNIGHT said he would like to ask Dr. Murray if the solid stick of nitrate of silver were used for its destructive effect or to stimulate absorption.

Dr. MURRAY replied that it was his impression that it had been used to stimulate absorption.

Dr. KNIGHT said that if he desired to destroy tissue he would use caustic potash. He had never seen any evidence of the tubercular diathesis in any of his cases. He was sorry that he had failed to elicit any information in regard to the permanent effect of surgical operation on these nodes upon the voice.

(To be continued.)

Colors. London: Charles Griffin & Co., Limited, 1894. Pp. viii-199. [Price, 21s.]

Local Anæsthetics and Cocaine Analgesia; their Uses and Limitations. By Thomas H. Manley, A. M., M. D., member of the New York Academy of Medicine, etc. St. Louis: J. H. Chambers & Co., 1894. Pp. xi-11 to 183.

Trephining in Three Cases of Epilepsy; Two of the Jacksonian Variety; One due to Old Meningeal Hemorrhage; Improvement. By J. T. Eskridge, M. D. [Reprinted from the *Medical News*.]

Some Statistics of Diabetes Mellitus. By N. S. Davis, Jr., M. D. (Read before the Annual Meeting of the Illinois State Medical Society.)

Cauterization of the Nares, and Accidents that may Follow. By E. Fletcher Ingals, M. D. (Read before the Annual Meeting of the Illinois State Medical Society.)

Electricity in Diagnosis and Prognosis of Affections of the Peripheral Nerves. By William M. Leszynsky, M. D. [Reprinted from the *Medical Record*.]

A Comparative Study of the Different Methods of Treating Posterior Displacements of the Uterus, both Mechanical and Operative. By Leonard S. Rau, M. D. [Reprinted from the *Post-Graduate*.]

Pregnancy after Ventral Fixation of the Uterus. A Report of Four Cases. By George M. Edebohls, M. D. [Reprinted from the *Transactions of the New York Obstetrical Society*.]

Sleep, Sleeplessness, and Hypnotics. By S. V. Clevenger, M. D. [Reprinted from the *Journal of the American Medical Association*.]

The Treatment of Anal Fissure, or Irritable Ulcer of the Rectum. By Lewis H. Adler, Jr., M. D. [Reprinted from the *American Lancet*.]

An Address on Appendicitis. By J. William White, M. D. [Reprinted from the *Therapeutic Gazette*.]

The Treatment of Empyema, with Selected Cases. By J. William White, M. D., and Alfred C. Wood, M. D. [Reprinted from the *Therapeutic Gazette*.]

Experience in Cholelithiasis, with and without Icterus. By Professor Riedel, of Jena. [Review from the *American Journal of the Medical Sciences*.]

The Operative Treatment of Fistula in Ano. By Lewis H. Adler, Jr., M. D. [Reprinted from the *International Medical Magazine*.]

Some Remarks on the Address delivered to the American Medico-psychological Association, by S. Weir Mitchell, M. D., May 16, 1894. By Walter Channing, M. D. [Reprinted from the *American Journal of Insanity*.]

Beiträge zur Biologie des Gonococcus und zur pathologischen Anatomie des gonorrhoeischen Processes. Von Dr. Ernest Finger, Dr. A. Ghon und Dr. F. Schlagenhauer. [Sonderabdruck aus der *Archiv für Dermatologie und Syphilis*.]

Report on Typhoid Fever in the District of Columbia, submitted by the Medical Society of the District of Columbia to the Committee on the District of Columbia of the United States House of Representatives, June 11, 1894.

Transactions of the American Ophthalmological Society. Thirtieth Annual Meeting. Washington, D. C., 1894.

Observations upon the Medical Department of the British Army, made in 1891. Abridged from an Official Report. By Brevet Lieutenant-Colonel Alfred A. Woodhull, U. S. A. [Reprinted from the *Transactions of the Association of Military Surgeons of the United States*.]

Handbuch der physikalischen Optik. Von H. von Helmholtz. Zweite, verbesserte Auflage. Mit zahlreichen in den Text eingedruckten Holzschnitten. Achte Lieferung. Hamburg und Leipzig: Leopold Voss, 1894. Pp. 561 to 640.

Book Notices.

BOOKS RECEIVED.

A Treatise on the Diseases of the Female Genitalia, by Dr. J. H. Moore, M. D., of New York. Published by the Author, 1894. Pp. 1-100. Price, 10c. This is a very valuable work, and one of the best of the kind published in this country. It is a treatise on the diseases of the female genitalia, and is written in a clear and concise manner. It is a very valuable work, and one of the best of the kind published in this country.

Practical Treatise on the Diseases of the Female Genitalia, by Dr. J. H. Moore, M. D., of New York. Published by the Author, 1894. Pp. 1-100. Price, 10c. This is a very valuable work, and one of the best of the kind published in this country. It is a treatise on the diseases of the female genitalia, and is written in a clear and concise manner. It is a very valuable work, and one of the best of the kind published in this country.

filtration through animal charcoal is very valuable as a means of removing the greater portion of any lead suspended or dissolved in the water. Waters having an acid reaction are the ones which act most powerfully on lead, especially when at the same time they are under high pressure. Therefore treatment with powdered chalk or lime previous to the distribution lessens the likelihood of lead being present. Hardness of the water is not thereby increased by more than one degree at most. Individuals employing such filters must attend well to them and renovate them from time to time.

The Bacteriology of Lake Ontario Water.—Shuttleworth (*Engineering News*, October 4, 1894), testing near Toronto, reports that the normal number of bacteria to the cubic centimetre in the parts of the lake two or more miles from shore is about one hundred. It was observed that, as in other lakes which are not violently disturbed, the least number of bacteria is found somewhere between the top and the bottom. Because of sedimentation, the largest number is found near the bottom. The best position for the new (Toronto) intake was decided to be twenty feet from the bottom. The number of bacteria was, as elsewhere, larger in the cold than in the warm seasons of the year.

Continuous vs. Intermittent Filtration of Merrimac River Water.—Fuller (*Engineering News*, October 4, 1894), speaking from the results of the Lawrence experiments, says that during midsummer—the period of greatest bacterial activity within the filters, and also the time when the amount of free oxygen is least—intermittent filtration gives rather better results than come from the use of continuously acting filters; but these latter, by reason of their being more protected from the effect of freezing weather, are somewhat preferable during midwinter, when the river water is saturated with oxygen. It is absolutely essential with sewage, and also at times with certain waters, that the pores of the filter be charged with oxygen from time to time.

During 1893 it was found that an average of 98.54 per cent. of the bacteria present in the river water were removed by the filtration. Of those that got through (or appeared in the filtered water), the majority belonged to the most hardy forms of water bacteria, and from one seventh to one fourth of them were present in the very resistant form of spores. When typhoid and other fecal bacilli were applied, they could get through, but only in much more limited numbers than ordinary water bacteria. The results are given in the *Annual Report of the Massachusetts State Board of Health*.

Filter Beds and Mechanical Filters on a Large Scale. Comparative Cost (see report of City Engineer Shedd, of Providence, R. I., *Engineering News*, October 4, 1894).

Aug. 15, 23, 30, 1894).—After considerable experimenting and comparing the results of the various filter beds and mechanical filters, it was found that the most efficient and economical method of filtering Pawtucket River water in sufficient quantity to supply the

city, for \$200,000. While the Lawrence (Mass.) beds cost a little less than this, the Poughkeepsie beds (under unusual conditions) cost over three times as much. Foreign beds cost more than the Providence estimate, yet, owing to unlike conditions, foreign figures are not of much value here, except perhaps for the point that covered beds cost about fifty per cent. more than the open ones.

The Hamburg plant, the newest and best European one, cost about \$30,500 an acre. The operating expense is about five dollars for every million United States gallons of filtered water, all expenses being included excepting interest on cost of plant.

Bread and Bacteria.—Does baking always sterilize a loaf? Walsh and Waldo (*Brit. Med. Jour.*, Aug. 18, 1894, p. 355, also p. 786) made gelatin cultures from the center of a number of loaves of London bread (recently baked) and found therein thirteen different species of micro-organisms. The average maximum temperature reached by the center of a quarter loaf in the oven is from 163.4° to 186.4° F., and of a half quarter loaf is from 186.8° to 203° F. [These figures are much below those derived from studies of the best Continental and American bread, and they illustrate the importance of thorough baking.] Reasoning by analogy, Walsh and Waldo infer that disease-producing organisms can remain alive in the interior of a baked loaf. Many cases of choleraic diarrhoea and similar troubles seem to some to be traceable only to deteriorated or bad bread. Hence moist, sour loaves should be rejected. Probably flour deteriorates from the moment it is ground.

Baland and Masson (*Semaine médicale*, 1893, No. 70) found that French bread was sterile on coming from the oven. It ought to be said that the English loaves are apt to be bulky and poorly baked, as is also the case with our ordinary American bread. Properly baked bread is free from disease germs.

Sterilized Milk, its Preparation and Value for Infants.—Flügge, in a lengthy and rather polemic article (*Ztschr. f. Hyg.*, xvii, 272, June, 1894), reviews the known facts and adds some new points of theoretical and practical value. Moderate heating, even if only Pasteurizing (the milk being kept for thirty minutes at 158° F.), destroys the bacilli of tuberculosis, diphtheria, typhoid, and cholera. Yet neither this nor ordinary "sterilizing" kills the numerous bacteria that cause milk to spoil. Of these the most harmful to sucklings seem to be bacilli whose very resistant spores render it necessary to steam milk two to six hours in order to effect actual (complete) sterilization.

The acute intestinal disease called cholera infantum, and marked by rapid loss of water from the body, may fairly be considered to be in the main due to food (milk) abounding in these bacteria. Defective regulation of the body heat is also a factor. Healthy breast milk is unquestionably the best food for babes. Cow's milk and artificial foods are very apt to contain enough of the harmful bacteria to cause bowel disorders. Carefully obtained statistics show that among infants suckled at healthy breasts only a twentieth as large a proportion die of intestinal catarrh as among babes artificially fed. No mere difference of environment can explain this immense disproportion.

Admitting that bacteria, increasing enormously in the milk because of warm weather, cause the summer prevalence of intestinal diseases among artificially nourished infants, it is important to know more of these micro-organisms most potent for harm. Experiments made by Flügge show that 150° F. destroys all common bacteria, the proteus variety, most of the coliforme sorts, and some others. Among the kinds surviving the brief boiling are distinguished two classes: 1. The obligate anaerobes, which decompose milk slowly and leave tolerably resistant spores. 2. The aerobes or facultative anaerobes, which belong to the group of the so-called lactic or potato bacilli

in high-class newspapers, as in certain others, a series of advertisements of persons and places proposing 'massage' treatment. The form of some of these announcements has been itself in many cases sufficiently suggestive. That some of them are not intended as covers for any evil design is, of course, beyond question. That no small proportion are the lures and touts of places of execrable character is equally certain. We shall have occasion to refer to some of them in the articles that are to follow. We will merely call attention here, in the first instance, to the nature of the advertisements and the general arrangements of the trade.

"The advertisement generally begins with the word 'massage.' To this, 'electrical' treatment is sometimes added, and occasionally there is an 'announcement of a 'bath de luxe.' This may be, perhaps, a 'pine bath'—the specialty consisting, of course, in the cheap and easy addition of a little pinol. It is then customary to announce that 'Madame' X., assisted by 'Nurses' Y. and Z., 'receive patients daily' at some address within easy reach of clubland, 'from 11 A. M. to 7 P. M.,' or thereabouts. It is indicated that arrangements may be made at other times 'by appointment.' Occasionally, but not commonly, 'Madame' refers to a multitude of diseases of the vaguer type, including, let us say, 'debility' and 'insomnia.' The usual advertisement, however, makes no detailed reference to the supposed medical quality of the operation, unless it be in the insertion of the word 'certificated' after the name of the principal. In some cases we have noticed the words 'London Hospital' certificate. As there is no real 'hospital' qualification in massage, this is probably a reference to a gentleman having more or less of hospital status who grants such certificates; but to this subject we shall return. Sometimes the lady assistants are commended to the public by the significant addition, 'fresh staff.' In one or two cases there has been special reference to a 'page boy'; but this topic, we are informed, has been discouraged by the newspapers. You are occasionally told that the rooms are 'well warmed,' or 'cool and pleasant'—according to the season—'and simply that they are 'luxurious.' One lady advertised, earlier in this year, under the heading 'Massage,' in the following terms: 'Wanted, an assistant, at once, not over twenty-three; bright and nice manners; from two to seven.' The prospect offered was a pound a week. If the work was honest, this was not much, but, as will be seen hereafter, there are sometimes other emoluments besides the stated salary.

"There does not, however, appear to be any great difficulty in obtaining assistants, for the advertisements for these are comparatively rare. One enterprising madame, who was provided with three assistants, and whose bath-room was equipped with 'a magnificent Turkish bath,' another who made special reference to 'loss of nerve power,' called attention to her 'special continental system.' Sundays are generally

closed, but the advertisements for the treatment of 'neuritis' and 'neuritis' are not infrequently inserted. One advertisement for 'massage' treatment, under the heading 'Massage,' in the following terms: 'Wanted, an assistant, at once, not over twenty-three; bright and nice manners; from two to seven.' The prospect offered was a pound a week. If the work was honest, this was not much, but, as will be seen hereafter, there are sometimes other emoluments besides the stated salary.

her *clientèle*. It is not very difficult, in fact, to distinguish certain steady and serious establishments from a kind of floating and shifting gang.

"Our readers can judge for themselves from our account, or still better from a file of the newspapers, whether these advertisements do or do not appear to indicate a wholesome development. We are far from saying, we repeat emphatically, that all the advertised establishments are necessarily suspect. We have reason to know that some of these ladies are honest and capable, and we have every sympathy with them, for their legitimate and helpful work is ruined by their less scrupulous competitors.

"Some of the announcements, which look suspicious and to which we have directly or indirectly referred, may be innocent or merely indiscreet. We shall bring and desire to bring no charge against any one place or person except those whom we shall presently identify, and as to these we shall state not surmises and inferences, but facts which can, if necessary, be proved.

"In the summer months the establishments are closed for the most part. When London fills up again they become active. We will leave for another article the explicit statements which we have to make as to the nature of the practices which go on in many of these places; but for the present it may be sufficient to state shortly what kind of place the casual inquirer will find if he goes for the first time to some of the addresses we refer to. He will find probably a flat of four or five rooms in a fashionable West End locality. In many cases the establishment is on the first floor over business premises. The approach to it is guarded by various arrangements for privacy. As the visitor enters an electric bell rings automatically, and he will find himself received in a well-furnished room by a lady of middle age, with a certain capable air of respectability. She will make no inquiry as to his name, and probably none as to his complaint. He will be invited, with little loss of time in preliminaries, to adjourn to a room luxuriously furnished, where he will find a bed or couch spread with blankets. He will be informed, unless it is assumed that he knows it already, that the terms are for an hour a guinea, but that he can stay as long as he pleases by the same rate. In some instances it will be suggested to him that it would be a good thing to have a bath first and the massage afterward. It will be assumed, as a matter of course, that he intends to have 'general massage,' that he will want a young lady to do it, and that he will undress completely.

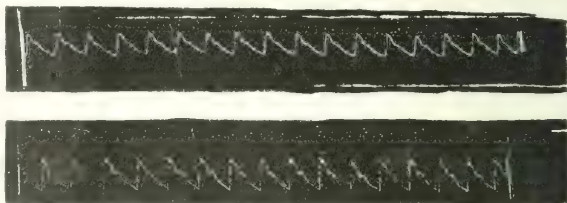
"Madame will then leave him to his own devices. In two or three minutes the lady assistant will appear, and the 'treatment' will be duly administered. He will not be interrupted, nor, in fact, will he see 'Madame' again until he pays her as he leaves the house. This state of things in itself will be admitted by everybody to be sufficiently risky. What it leads to we shall feel it our duty to indicate with decent plainness in another article."

"If we have said that the police did not appear to be able to discover any of the abuses to which we called their attention before the vacation, and which we described in the last article under this heading. Our commissioners, however, did not find that the task presented any peculiar difficulty. Various gentlemen took occasion to present themselves at different establishments in the ordinary course of business; and they found that the young lady assistant who carried on the treatment were quite prepared, not on the first, at least on the second or third visit to talk with decent freedom about the peculiarities of the trade. One fact was common knowledge everywhere—the alarming incident of the closing of the house to which we had already referred, and as to which Mr. Aspinwall asserted in the House of Commons that either it had never occurred or at least he had not been able to find any trace of it. The estab-

being less accentuated, the second aortic stronger—in short, the abnormal difference between the two sounds before being appreciably less marked after the bath. Murmurs that are almost inaudible before become intensified; and, conversely, some loud bruits are lessened in intensity. In short, so far as can be determined by physical examination, these baths appear to lessen the rapidity and increase the force of the heart's contractions, thereby occasioning a better filling of the great arterial system with corresponding depletion of the engorged veins. This is borne out by experiments on animals conducted by Dr. August Schott, which demonstrated, by means of a mercurial manometer placed in the trachea, that a rise of arterial pressure was the result of nearly complete immersion in a saline solution.* In this respect, therefore, the effect of these baths is similar to that following the administration of digitalis: both lengthen diastole and augment the force of systole. In addition, digitalis exerts a powerful influence as a vaso-motor constrictor, which action sometimes offsets its beneficial effect on the heart. This action on the vascular system is felt by all the arteries alike. Herein, as it seems to me, lies the difference between the effect produced by digitalis and that exerted by these baths. Experiments have demonstrated that the contraction of cutaneous vessels effected by cold baths occasions at first increase of blood pressure and of the frequency and strength of the heart's contractions, but that later on the acceleration gives place to a retardation of the rate.† The pulse, therefore, becomes slower and stronger during a cold bath, provided this be not continued until vaso-motor paresis sets in. Thus far a cold bath of moderate duration affects the heart in its contractions similarly to digitalis, although the mechanism by which this result is accomplished differs. On the other hand, Schüller‡ has shown that the application of cold to the abdomen—that is, contraction of the cutaneous vessels of the abdomen—is followed by prompt dilatation of the vessels of the pia mater; whereas heat applied to the abdomen is succeeded by constriction of the vessels of the pia mater. From these experiments it is probable that the effect of a cold bath is not to cause contraction of internal as well as of cutaneous vessels, but that a cold bath is followed by dilatation of internal vessels. In short, during and after a cold bath of moderate length, the heart contractions were slowly and forcibly. Furthermore, although there is some evidence of constriction as to the cutaneous vessels, it is not so marked, and the heart contractions are not so strong as to the cutaneous vessels. If it is probable, as mentioned by Schüller, that the bath is not so vaso-motor dilator, there is some evidence of constriction of the cutaneous vessels, of considerable strength.

From the foregoing facts, and from empirical knowledge of the beneficial effect of a balneological treatment of many cases of heart disease, I venture to deduce the following as the *modus operandi* of these baths:

Upon a patient's entering the bath there is an initial or primary constriction of the cutaneous vessels produced by the cold. This is promptly followed by a dilatation of the internal vessels and stimulation of the heart; its contractions, at first perhaps accelerated, become subsequently reduced in rate and augmented in force. After a moment or two the sensation of chilliness gives place to one of warmth, when it is probable the contraction of the cutaneous vessels grows less; the gentle stimulation of the sensory cutaneous nerves produced by the salt serves, however, to maintain the increased energy in the cardiac contractions. This secondary feeling of warmth does not act like a primary application of heat to the surface of the body by causing contraction of internal vessels; their dilatation persists, as is shown by the accompanying sphygmographic tracings (Nos. 1 and 2). The first was taken immediately before the bath; the second, taken after the



patient had been in the bath ten minutes, bears slight but unmistakable testimony to increased fullness and force of the pulse during the bath without increased tension; while there is nothing to suggest the slightly lessened tension being due to diminished energy of the left ventricle.

Under these conditions the heart not only has less labor to perform, but it is actually aided in the accomplishment of its decreased task. Like digitalis the baths slow and strengthen the cardiac contractions, but unlike digitalis they dilate rather than contract the arterial system, or, in other words, reduce rather than increase peripheral resistance.

The light exercises, or, as the Schott brothers choose to designate this part of their cardiac therapeutics, the gymnastics, are an extremely simple but important adjunct to the baths. They consist of movements of flexion, extension, and rotation of the extremities and trunk; but the individuality of this treatment lies in the application of counter resistance made by an attendant trained for that purpose. He must see to it that the movements are performed slowly and steadily, that they are interrupted by short periods of repose, and that the effort exerted by the patient is not so great as to cause embarrassment of respiration or undue acceleration of the pulse. The attendant must watch that the patient hold his breath and thereby overstrain the already feeble right ventricle, and must at once call a halt upon evidence of dyspnea. Finally, he must so apply his counter pressure as to offer resistance

but not hinder free movement of the extremity. This requires some judgment and skill, yet is not so difficult as to be beyond the acquirement of an intelligent friend or relative, who can then help the patient to continue his exercises indefinitely after the latter has passed from the physician's daily superintendence.

These exercises exert an effect on the heart and circulation similar to that of the baths, and therefore supplement and re-enforce the balneological treatment. If properly performed, and if the resistance be judiciously apportioned to the patient's endurance, these gymnastics slow the rate and augment the force and volume of the pulse, as has been repeatedly shown by the sphygmograph and sphygmomanometer. Percussion and auscultation reveal the same improvement in the size of the dilated heart and in the character of its sounds as after a bath. Patients not unfrequently comment on their feeling of *euphoria* succeeding this form of treatment; dull præcordial pain, discomfort, or sense of oppression gives place to a condition of ease and lightheartedness. On the other hand, if too great resistance be applied, there is produced a sensation of cardiac distention with variable degree of dyspnoea, while the pulse grows more rapid and feeble. Improved arterial circulation is so manifest a result of these exercises that Dr. Schott has known them to lessen the frequency, nay, even the severity of attacks of angina pectoris in individuals with arterio-sclerosis who had been unable to indulge in even very moderate physical exercise taken in the ordinary ways of walking, etc. Permanent amelioration of the sufferer's condition has been achieved in some of these cases.

REPORT OF CASES. — Between November 1, 1893, and May 1, 1894, nineteen cases of chronic heart disease have been treated by me according to this method, nine males and ten females, classified as follows :

Notes. No. 1. Agal with five joints. Dorsal opening of modified valves, marked dilatation of both ventrals, first degree of loss of compensatory modification and progressive dilatation of the

No. 2. Aged forty-seven years. Indurated at mitral valves, no stenosis slightly disturbed, no other cardiac changes.

No. 5. Aged forty-five years. Incubation of active tubercle due to *Gottwein's disease*, cutaneous and Alveolar form *perforans* more present.

Note 4. Apud Helixonia *fascia*, delimitatione intermedium et illi fasciae, latet et circumscriptio. Dicitur diphysica, quod fasciae, in appropinquato, sunt collatae, tunc solummodo, velae et circumscriptio.

YU. V. ANAT'YEV, *Senior Scientific Associate of the Soviet Academy of Sciences, with a group of postgraduate students, several dozens of years of experience in conducting astronomical work in the USSR and in the USSR Academy of Sciences.*

Dr. A. Agde (University of Oslo) *Organic management of the forest with emphasis on self-regulating, sustainable and self-renewing systems of forest*

Fig. 6. Adult live (top view). 1—epitheliochorial placenta of the latest stage of development; several layers of two of chorionic villi; 2—chorionic deciduallike decidua; 3—epitheliochorial membrane of the living, easily soluble in water ground tissue; 4—decidua capsularis.

eration of left ventricle with relative mitral insufficiency; first degree of loss of compensation; moderate arterio-sclerosis; chronic bronchitis.

Remarks.—No. 10. Aged 60 years and 8 months. Insufficiency of mitral valves, first degree of loss of compensation; passive congestion of liver and spleen; old-standing pleuritic adhesion over the right lower lobe.

No. 11. Aged forty-five years. Stenosis of mitral orifice, first degree of loss of compensation; marked hepatic enlargement from hypertrophy. No other appreciable abnormality.

No. 12. Aged twenty-one years. Insufficiently developed valves, first degree of loss of compensation; anæmia; chronic gastritis due to congestion.

No. 13. Aged eighteen years. Relative insufficiency of mitral valve with first degree of loss of compensation; chlorosis hæmoglobin nineteen per cent.

No. 14. Aged twenty-eight years. Insufficiency of mitral valves, compensation threatened; hypochondriasis.

No. 15. Aged twenty-two years. Pronounced stenosis of mitral orifice; first degree of loss of compensation.

No. 16. Aged twenty-five years. Insufficiency of mitral valves due to chronic endocarditis, but intensified by anaemia first degree of loss of compensation.

No. 17. Aged thirty-four years. Chronic endocarditis of mitral and aortic valves, insufficiency of mitral predominating stenosis of aortic orifice, preventing free regurgitation; first degree of loss of contraction.

No. 18. Aged fifty-nine years. Idiopathic enlargement of heart, in stage of dilatation; first degree of loss of compensation; moderate arterio-sclerosis; no chronic nephritis demonstrable.

No. 19. Aged thirty-four years. Moderate stenosis of aortic orifice and feebleness of left ventricle; complicating chronic interstitial nephritis, slight oedema of ankles and face.

Of these cases, Nos. 3, 4, 9, 11, 16, and 17 did not for one reason or another complete a full course of treatments. No. 3 discontinued treatment because of its interference with his employment. His baths were taken irregularly and no effect was felt. No. 17 was not properly disposed

No. 4 was obliged to abandon treatments at the end of one week because of marked increase of symptoms due to the fatigue of his daily journey to and from the bathroom. As this patient presented bradycardia and a nervous system to the extent of producing great cardiac distress, it is not unreasonable to attribute the increase of the symptoms to inopportune exertion rather than to the baths.

No. 2 mentioned the Idaho position, some years of rain, first and well known, that he gave. Hence, up, because of our meeting a mile during the increasing weather of November, and his departure. Therefore, in progress, the progress of the same road, some weather.

Not all wave-packet generation is treated in the current understanding of the situation. For example, the generation of a wave packet in a medium is not necessarily accompanied by a change in the medium's properties. For example, the generation of a wave packet in a medium is not necessarily accompanied by a change in the medium's properties.

Now, the fact that we have a degree of freedom that we can use to put back the surface needed to stop an electron and remove its kinetic energy.

N. 17 was killed by a small mouse in late October but the larvae hatched at the end of a week. This was a case that could most easily be ignored as being due to

April 3d.—At close of balneological treatment patient declared she had lost her precordial pain and distress on exertion, and indeed was not troubled with dyspnea on ordinary exercise. Examination of heart corroborated the retraction of right ventricle noted in March.

The annexed tracings (Nos. 8 and 9) show the improvement in the character of the pulse and explain themselves. The first was taken before, the second after, the course of baths.

The baths exerted no appreciable effect upon the cardiac murmur, but a fair degree of compensatory hypertrophy of the right ventricle became established. The patient expressed herself as much pleased with the results.

In conclusion, I desire to speak briefly of the contraindications to this form of treatment. There can be no doubt of its dangers in degenerative changes of the blood vessels and myocardium, such as aneurysm and advanced arterio-sclerosis, acute softening and great fatty degeneration of the heart. In these conditions rupture might result from heightened intravascular and intracardiac pressure.

Furthermore, the query has been made as to whether chronic interstitial nephritis is not also a contraindication on account mainly of the danger of setting up acute inflammation of the kidneys. It might be urged, in the second place, that the increased vascular tension produced could prove disastrous by augmenting the heightened arterial tension already existing.

To the former objection I can reply that when Dr. Schott was questioned on this point, he stated he did not consider chronic interstitial nephritis a contraindication to the baths. It would seem as if the stimulating action on the skin of the salts and carbonic acid rendered the effect on the kidneys different from that of a bath in plain water at the same low temperatures.

As regards the dangerous augmentation of existing vascular tension to the extent of either rupture of a blood-vessel or of stretching the cavity of the left ventricle, I would suggest that such baths would not be administered so long as the hypertrophied heart was adequate to the peripheral resistance to be overcome. They would be given only when the cardiac energy was threatening to fail or had actually failed. Under such circumstances the only thing that could preserve the patient would be a restoration of the heart's power. This might be possible if the heart walls were not too degenerated and the kidneys not greatly contracted. Moreover, if the baths in question bring about even a slight degree of dilatation of the internal vessels, then the peripheral resistance would be lessened rather than increased; and if the stimulation was thereby improved, so likewise would be the action of the kidneys.

In the case of recent cardiac dilatation associated with chronic interstitial nephritis (Case VIII) the patient was so weak a general resort to tonics would have been that the treatment was undertaken as a *desperate resort* after the patient had become so far advanced with the process as to be well beyond recovery.

It is a question for discussion as to whether or not the nature of the treatment was well adapted to the heart in chronic nephritis associated with it.

The first indication for resorting to the use of the

female patient with chronic interstitial nephritis and aortic stenosis, are of interest as bearing on the effect of these cool baths on damaged kidneys. The first was made two or three weeks before she began the baths and the other, May 21st, was during her fourth week of baths, when she was getting a temperature of 89° F. for fifteen minutes. Nitrogenous food is now practically eliminated from her dietary, which was not the case before she came under my charge.

Analyses.

	First.	Second.
Specific gravity	1.009	1.015
Reaction	Faintly acid.	Acid.
Albumin	Small amount, one fortieth by weight.	A trace.
Sugar	None.	None.
Urea	3½ grains to the ounce.	7½ grains to the ounce.
Epithelia		Vaginal and renal.
Casts	Few medium-sized hyaline, one partly granular.	Few medium-sized granular.

VENETIAN BUILDING, CHICAGO.

THE DIFFERENTIAL DIAGNOSIS OF TRAUMATIC INTRACRANIAL LESIONS.

By CHARLES PHELPS, M.D.,

SURGEON TO BELLEVUE AND ST. VINCENT'S HOSPITALS;
CONSULTING SURGEON TO GOVERNOR'S HOSPITAL.

(Continued from page 582.)

CASE LIII. *Symptoms*.—Hæmatoma in left parietal region; coma; stertor; no response to external irritation; pupils widely dilated; pulse full, slow, and strong; temperature on admission, 99°, and rose steadily to 107.8°; respiration, 32, 46, 14; pulse, 62, 70, 126. Death in four hours and three quarters.

Lesions.—Coronal suture separated and fracture continued into anterior part of middle fossa on both sides; general hyperæmia with well-marked but not excessive œdema, and some punctate extravasations.

CASE LIV. *Symptoms*.—Consciousness lost but partially restored on arrival of ambulance; large hæmatoma in right posterior occipital region; slight epistaxis; pupils moderately contracted; respiration shallow; right radial pulse after two hours more frequent than the left—84 and 74, 114 and 110; temperature on admission, 96°; in two hours, 95°; in six hours normal, and rose to 100.4° before death in nine hours.

Lesions.—Separation of coronal suture on the left side and fracture continued through middle fossa, sella turcica, right middle fossa, right petrous portion, and posterior fossa, to foramen magnum; large epidural clot in left temporal region; slight cerebral œdema; old meningeal adhesions, and small white nodules in the pia.

CASE LV. *Symptoms*.—Consciousness retained for fifteen minutes after admission; then delirious four hours; afterward consciousness lost; contusion of right side of head; hæmorrhage from left ear and nose, and hæmatemesis; slight dilatation of right pupil; temperature on admission, 101°, and rose to 106°; pulse, 90 to 108; respiration, 22, 24. Death in ten hours.

Lesions.—Linear fracture extended from right squamous portion through body of sphenoid and both middle fossæ into left temporal bone; a second fissure extended from sphenoid into craniiform plate; large epidural clot in left middle fossa; marked general hyperæmia.

the left pupil; right normal; temperature on admission 101°; in four hours, 102°; in sixteen hours, 105°, and in twenty-four hours, 106°; pulse and respiration frequent throughout. Death in twenty-six hours.

Lesions.—Extravasation of blood into the substance of left temporal muscle disclosed by incision; open fissure extended from squamous portion of right temporal bone across both orbital plates and intervening cribriform plate of the ethmoid, broke off left lesser wing of the sphenoid, crossed left middle fossa and petrous portion, and terminated in left margin of foramen magnum; epidural clot occupied the whole right anterior fossa, and another of smaller size existed in the left middle fossa; a thrombus filled the posterior part of the superior longitudinal sinus; cortical hemorrhage over superior surface of the cerebellum, derived from a small laceration of its lateral border; small pial hemorrhages over left parietal and temporo-sphenoidal lobes, and a larger one over right parietal lobe; large subcortical laceration of left temporo-sphenoidal lobe, excavating its substance beneath the second, third, and anterior portion of first convolutions, which did not reach the surface; moderate general hyperemia more marked in the pons and cerebellum.

CASE LXVII. Symptoms.—Patient, walked two miles to the hospital gate and was carried unconscious to the ward; ecchymosis of right eye and wide dilatation of right pupil, slight contraction of the left; no motor or sensory disturbances; left brachial pulsation full and strong, the right very small and weak; same conditions existed in the radial arteries, but the contrast somewhat obscured by contusion of the left wrist; temperature on admission, 98°; four hours later, 104°6'; immediately after death, 105°; half an hour post mortem, 105°4'; pulse, 40 to 64; respiration, 32 to 36; cyanotic just before death, at the end of five hours.

Lesions.—Contusion of scalp, disclosed by incision, extending from coronal suture backward above the temporal ridge; fracture in right middle fossa, involving both squamous portion of temporal and greater wing of the sphenoid bones; from external clot from laceration of anterior branch of the arteria meningea media, measuring three fluidounces, which filled the right middle fossa and flattened the temporal lobe laterally and inferiorly. When the clot was removed the brain retained its position, widely separated from the base, and having the anterior surface exposed and the adjacent middle fossa exposed. The middle cerebral veins and arterioles of the brain were congested and the surface between them at this pole, was more thickened and redened. There was a small laceration of the posterior part of the third left temporal convolution; another somewhat smaller than a bean-shot was found in the anterior part of the same on the upper part of the longitudinal fissure. The brain substance was generally hyperemic, especially in the left hemisphere, but without marked extravasation or thrombosis. The surface of section soon became deeply reddened and bathed in watery effusion.

CASE LXVIII. Symptoms.—Partial unconsciousness, sensory and motor disturbances from early on, succeeded by a few delirious fits, vomiting, dilatation of both pupils, retention of urine, greater fulness and strength of left radial pulse than of the right; mental condition, apathetic, indifferent, incontinence in the third day, when it was the usual course, being the second time it appeared, and a similar appearance of the first, which continued all within two or three days of death. At this time, before it occurred, were all the foregoing signs, when there were convulsed pains, which became general, and which a little later became more and more general. On the second day, the right of this space, possibly nervous origin, a decrease of temperature in the left hemisphere, and the increase in the right hemisphere, of the left lower extremity from the seventh

to the twenty-fifth days; delirium more active, lucid intervals less frequent, somnolence more continuous, and sense of hearing impaired; deafness progressive till complete power of articulation gradually lost, and finally communication only possible by gesture; dysphagia occurred more suddenly and a little later. The mental condition varied from normal to that of stupor or delirium; emaciation was progressive; paralysis and hyperesthesia of the left lower extremity were of late occurrence; recurrence of posterior cervical rigidity was once noted, but was transitory; toward the end control of urine and feces was lost; during the last twelve hours unconsciousness was complete, and respiration rapid, insufficient, and entirely nasal. Death occurred on the thirty-first day. The temperature on admission was 97°, became normal in four hours, and was afterward 99° till the invasion of bronchitis, on the third day, when it rose to 103°, and subsided with recovery from the complication. On the tenth day it again rose with the recurrence of intracranial symptoms to 103°4', and afterward varied from 100° to 104°, and was not often less than 101°+. The post-mortem temperature receded in half an hour from 103°4' to 103°. The axillary temperatures, carefully recorded from the sixth day, were symmetrical in nearly half the observations, and in the others usually varied two tenths of a degree, and were rather more frequently higher on the right side. The pulse was usually from 64 to 90. The respiration, always frequent, was rarely less than 30 in the minute from the time of admission.

Lesions.—No external injury; linear fracture extending from squamous, through petrous portion of right temporal bone; simple thrombosis of lateral sinuses from torcular Herophili into jugular veins; punctate extravasations in pia mater; large occipital veins distended; no serous effusion at the vertex; but patches of false membrane mainly upon left frontal lobe, and upon either side of the median fissure. Several ounces of turbid serous effusion at the base, and a large amount in the lateral ventricles; fibrinous exudation covering the pons, medulla, and inferior surface of the cerebellum, one to two millimetres in thickness, and in the Sylvian fissures; limited contusion of posterior part of the surface of the right temporo-sphenoidal lobe, covering a space an inch square, which was of a yellowish color and studded with hard miliary hemorrhages; fornix much softened, and brain substance generally hyperemic and oedematous.

Immediate microscopic examination showed the membranous effusion to be crowded with small round cells which extended for some distance in diminishing quantity into the substance of the underlying cerebellum. Other portions of the brain tissue were normal. The straggles of granular tissue described at the end of the first case.

CASE LXIX. Symptoms.—Coma, unconscious from admission at time of admission; hematoma over right frontal region; vomiting several times; pupils, normal; bowels, constipated; temperature, 98°; pulse, 60; respiration, 20. One hour later, with dilatation of right pupil, and great rigidity of neck, convulsions, the left, the right, and then the left, followed by rigidity of the left side, and convulsions commencing on the right. At the end of one hour and a half temperature, 97°, pulse 50, and respiration, 20. After one hour, the patient was unconscious. Death in three hours from onset of coma.

Lesions.—Hematoma over right frontal region, extending through petrous part of right temporal bone, and into middle fossa; small pial hemorrhages over left parietal and temporo-sphenoidal lobes, and a larger one over right parietal lobe; large subcortical laceration of left temporo-sphenoidal lobe, excavating its substance beneath the second, third, and anterior portion of first convolutions, which did not reach the surface; moderate general hyperemia more marked in the pons and cerebellum.

the pons; general hyperemia and pinetia; extravasations in the anterior and posterior portions of the brain.

CASE LXXVI. Symptoms.—Coma; stertor; pupils dilated; small wound and larger hæmatoma in left parietal region; sensation diminished in both lower extremities and muscular twitching in the right; vomiting; pulse 52. After trephination a soft epidural clot was discovered and a considerable loss of blood ensued. Using as a guide a fissure which extended through the squamous and petrous portions into the middle fossa, the bone was chiseled and the posterior division of the middle meningeal artery, which was found to be the source of hæmorrhage, was clamped. The pulse increased in frequency to 72 to 104, the pupils became normal, but consciousness was not restored, and death occurred a few hours later.

Lesions as above.

CASE LXXVII. Symptoms.—Unconsciousness and death immediately after admission.

Lesions.—Skull crushed and flattened on right side; fragments very movable; comminuted on the left side; extensive laceration of the brain posteriorly in the left hemisphere; only small superficial wounds of the scalp.

CASE LXXVIII. Symptoms.—Coma; stertor; hæmorrhage from left ear; contusion of left parietal region; pupils dilated; pulse full and slow; temperature on admission 98°, and rose progressively to 103.6° at time of death in four hours; no decrease for one hour post mortem; respiration 18 to 20; pulse on admission 70 and rose to 90.

Lesions.—Fissure extended from left parietal eminence, through squamous and petrous portions into middle fossa; deep laceration of inferior surface of right temporo-sphenoidal lobe and of lateral border of right cerebellum; cortical hæmorrhage filled right middle fossa; hyperemia of the right side of brain.

CASE LXXIX. Symptoms.—Consciousness lost and not regained; coma grew more profound; slight edema of scalp in right temporal region; pupils slightly dilated; great restlessness and irritability; vomiting; urinary retention; temperature on admission 100.4° and rose to 102, with effusion of blood from fractional trepanning; pulse 94 to 102; respiration 18 to 24; death on forty-three hours.

Lesions.—Hæmorrhage over whole right side of the brain; linear fracture from right frontal through parietal bone into the lateral ventricle; fracture of the frontal bone from the frontal bone on the right side, extending upward over the lateral surface of the brain; laceration of the inferior surface of both temporo-sphenoidal and both occipital lobes; laceration of the inferior surface of both frontal lobes in their anterior portion, very extensive on the left and lateral; hæmorrhage in the anterior border of the cerebellum; extensive general hyperemia with pinetia and extravasations.

CASE LXXX. Symptoms.—Coma; violent frontal headache.

Lesions.—Large lacerated penetrating wound in right frontal region; small amount of blood and hæmorrhage from the wound; fracture of the frontal bone from the frontal bone through both frontal lobes, comminuted both orbital and intervening cribriform plates, and emerged through left temporal bone. The fracture, comminuted and jagged, extended from the frontal bone into the lateral ventricle, and the inferior portion of the cerebellum; extensive general hyperemia with pinetia and extravasations.

CASE LXXXI. Symptoms.—Coma; frontal headache; frontal laceration; epistaxis; hæmorrhage from left frontal eminence into the orbital plate disclosed by incision. On the third day, temperature 100.4°; pulse 104; respiration 18; no decrease for one hour post mortem; respiration 18 to 20; pulse on admission 70 and rose to 90.

ing general, commencing in the evening of the first day, on admission was 100.2°, rose to 104.4° on the same day, and to 105.6° on the next, with recessions, and afterward varied from 102° to 105.2°, with no observation for six hours ante-mortem. Pulse on admission was 120, and subsequently 130 to 152. Respiration 26 on admission, and later 44 to 58.

Lesions.—Fracture extended from the orbit through posterior part of the ethmoid and body and right lesser wing of the sphenoid into the floor of the right middle fossa; general subarachnoid purulent effusion most marked in the left frontal region below the site of fracture.

CASE LXXXII. Symptoms.—Conscious on admission; Cheyne-Stokes respiration; dilatation of left pupil; right radial pulse fuller and stronger than the left; hæmatoma on the right side of the head anterior to the occipital junction, and small lacerated wounds over both frontal eminences; muscular contractions of left side, and later of both sides of the body. On admission, temperature, 99.9°; pulse, 104, and respiration, 19.

Lesions.—Multiple fracture; fissure across frontal bone above the orbits, extending on either side through the parietal bone to the median line of the vertex on both sides, thence to the occiput, and on the right side behind the ear to within an inch of the foramen magnum; another fissure on the left side extended through the orbital plate of the frontal and lesser wing of the sphenoid into the middle fossa. The dura and pia were lacerated from right mastoid region to a point just beyond the median line. The right motor area was extensively lacerated, and the right optic thalamus and corpus striatum to a lesser extent. The left hemisphere was uninjured.

CASE LXXXIII. Symptoms.—Unconsciousness; entered just below right ear and in front of the mastoid process, and was lodged in the petrous portion of the temporal bone; removed on the following day; delirium and rise of temperature on the sixth day, flexion of the right leg on the thigh on the eighth day, and death on the fourteenth day.

Lesions.—Fracture of the temporal bone, entering the petrous portion, epidural and arachnoid hæmorrhage at that point, pial hæmorrhage over left occipital lobe and left motor area, and laceration of the temporo-sphenoidal lobe at the site of fracture.

CASE LXXXIV. Symptoms.—Small round wound in anterior cervical region; ball of .038 caliber entered in median line over the larynx; no hæmorrhage from the wound or mouth; immediate partial aphonia; deglutition of liquids only possible and with difficulty; hæmorrhage from left ear. On the third day, deglutition impossible and mental condition stupid; followed by delirium requiring mechanical restraint on the fourth day, and on the fifth day, by paresis of right arm, hand, and lower extremity, and loss of fecal and urinary control. On the sixth day, hæmorrhage from the wound; on the eighth day, hæmorrhage from the wound; on the tenth day, hæmorrhage from the wound; on the twelfth day, hæmorrhage from the wound; on the fourteenth day, hæmorrhage from the wound; on the sixteenth day, hæmorrhage from the wound; on the eighteenth day, hæmorrhage from the wound; on the twentieth day, hæmorrhage from the wound; on the twenty-second day, hæmorrhage from the wound; on the twenty-fourth day, hæmorrhage from the wound; on the twenty-sixth day, hæmorrhage from the wound; on the twenty-eighth day, hæmorrhage from the wound; on the thirtieth day, hæmorrhage from the wound; on the thirty-second day, hæmorrhage from the wound; on the thirty-fourth day, hæmorrhage from the wound; on the thirty-sixth day, hæmorrhage from the wound; on the thirty-eighth day, hæmorrhage from the wound; on the fortieth day, hæmorrhage from the wound; on the forty-second day, hæmorrhage from the wound; on the forty-fourth day, hæmorrhage from the wound; on the forty-sixth day, hæmorrhage from the wound; on the forty-eighth day, hæmorrhage from the wound; on the fiftieth day, hæmorrhage from the wound; on the fifty-second day, hæmorrhage from the wound; on the fifty-fourth day, hæmorrhage from the wound; on the fifty-sixth day, hæmorrhage from the wound; on the fifty-eighth day, hæmorrhage from the wound; on the sixtieth day, hæmorrhage from the wound; on the sixty-second day, hæmorrhage from the wound; on the sixty-fourth day, hæmorrhage from the wound; on the sixty-sixth day, hæmorrhage from the wound; on the sixty-eighth day, hæmorrhage from the wound; on the seventieth day, hæmorrhage from the wound; on the seventy-second day, hæmorrhage from the wound; on the seventy-fourth day, hæmorrhage from the wound; on the seventy-sixth day, hæmorrhage from the wound; on the seventy-eighth day, hæmorrhage from the wound; on the eightieth day, hæmorrhage from the wound; on the eighty-second day, hæmorrhage from the wound; on the eighty-fourth day, hæmorrhage from the wound; on the eighty-sixth day, hæmorrhage from the wound; on the eighty-eighth day, hæmorrhage from the wound; on the ninetieth day, hæmorrhage from the wound; on the ninety-second day, hæmorrhage from the wound; on the ninety-fourth day, hæmorrhage from the wound; on the ninety-sixth day, hæmorrhage from the wound; on the ninety-eighth day, hæmorrhage from the wound; on the hundredth day, hæmorrhage from the wound.

CASE LXXXV. Symptoms.—Coma; frontal headache; frontal laceration; epistaxis; hæmorrhage from left frontal eminence into the orbital plate disclosed by incision. On the third day, temperature 100.4°; pulse 104; respiration 18; no decrease for one hour post mortem; respiration 18 to 20; pulse on admission 70 and rose to 90.

Lesions.—Fracture of the frontal bone from the frontal bone through both frontal lobes, comminuted both orbital and intervening cribriform plates, and emerged through left temporal bone. The fracture, comminuted and jagged, extended from the frontal bone into the lateral ventricle, and the inferior portion of the cerebellum; extensive general hyperemia with pinetia and extravasations.

miosis of both eyes; stertor; hæmorrhage from mouth, nose, and both ears; left pupil dilated, the right contracted, and both insensitive, and fibrillar twitching of the right chest muscles. No paralysis or muscular rigidity. The temperature on admission was 99.4°; pulse, 120, full and strong, and the respiration 13; the temperature rose to 99.6°, and the respiration was reduced to 4. Death occurred in twenty minutes; immediate post-mortem decline in temperature.

Lesions.—Extensive comminuted fracture of frontal bone and both frontal plates extending through the middle fossæ into the petrous portions; the left optic nerve was crushed by a fragment of bone in the optic foramen. The inferior surface of both frontal lobes was deeply lacerated over its whole extent, and a cortical hæmorrhage, still fluid, occupied all the basic fossæ, and covered the pons and medulla.

CASE LXXXVI. Symptoms.—Primary and permanent complete unconsciousness; hæmorrhage from left nostril; dilatation of both pupils; no convulsions or muscular rigidity; respiration not more than four to five in the minute at any time after the receipt of injury and finally not more than one; pulse continued full, strong, and of normal frequency for some moments after respiration ceased. Death in forty-five minutes.

Lesions.—Fracture extending through left side of the base into middle fossæ; moderate pial hæmorrhage covering whole surface of the brain, vertex, and base, and also the medulla; marked general hyperemia and œdema; contusion of under surface of left temporo-sphenoidal and frontal lobes.

CASE LXXXVII. Symptoms.—Primary and permanent unconsciousness; stertor; dilatation of the pupils; loss of urinary and fecal control, and pulmonary œdema; left radial pulsation fuller and stronger than the right; no external injury. Temperature, 104° to 104.8°; pulse, 120 to 166; respiration, 24 to 52. Death in four hours and a half.

Lesions.—Fracture extending into both occipital fossæ, and a fissure from *contre-coup* in the right middle fossæ; large epidural hæmorrhage from *contre-coup* over right frontal region; complete excavation of right frontal lobe with rupture of inferior cortex and consequent cortical hæmorrhage over superior surface of whole right hemisphere and left frontal lobe; contusion of third left temporo-sphenoidal convolution and small extravasation into center of the pons; general hyperæmia.

(To be continued.)

FIVE YEARS' WORK IN DISEASES OF THE RECTUM AT THE NEW YORK POST GRADUATE HOSPITAL.

BY CHARLES E. KELSEY, M.D.

THE total number of cases treated has been seven hundred and ninety-one. These are divided as follows: Hæmorrhoids, 267; fistula, 197; non-malignant ulceration and stricture, 84; fissure, 55; cancer, 49; proptus, 42; polypus, 33; abscess, 31; proctopus, 29; malformations, 6; pelvic abscess, 5; fecal incontinence, 7. The remainder include all the various forms of disease which find their way to the rectum, from stricture alone to chronic constipation.

The operations before me have been as follows: Hæmorrhoids, 147; fissure, 63; fissure, 39; abscess and cellulitis, 40; constipation, 34; abscess, 16; syphilis, 25; polypus, 14; proptus, 6; proctopus for stricture, 1; fecal incontinence, 4; proctopus and recto-sigmoiditis, 1; intussus-

ception, 1; pelvic abscess, 3; congenital malformations, 3; recto-vaginal fistula, 1; total, 418.

Leaving all of the minor cases with the simple statement that all hæmorrhoids are still operated upon by the clamp and cautery method because we have yet to find any other plan we like as well, and that we are still waiting to see any of the bad results which Allingham asserts are inseparable from this method, or any of the failures to cure which Whitehead says can not possibly be avoided, we pass at once to the consideration of the cases of stricture and incurable ulceration, for the study of which the clinic has thus far offered such exceptional advantages.

Of these we have shown and examined ninety-nine. Forty-nine have been malignant and fifty non-malignant. Sixty-four have been in males and thirty-five in females. In the last year's report attention was called to the fact that our experience here did not support the usually accepted statement that this disease was nearly twice as common in females as in males; and this fact becomes still more noticeable as the number of cases increases.

As to the nature of the non-malignant cases, four were of dysenteric origin. In them, as a rule, the amount of ulceration is far in excess of the amount of contraction. There is distinct stricture, it is true, but the symptoms of that condition are not as prominent as the discharge of pus and bloody mucus, the tenesmus and wasting away which characterize the ulceration.

Six were congenital and six were due to pressure from without or obliteration of the gut from diseases not primarily of the gut itself. One was distinctly tubercular in character. This leaves thirty-three out of fifty to be accounted for, and all of these are of the kind generally included under the head of syphilitic, although in only six of them was there any syphilitic history, and in only a single case am I convinced that syphilis had anything to do with the pathology. That particular case was a child suffering from well-marked *esthème* or lupus. For a time she improved greatly under specific treatment, though a few weeks ago her physician told me the improvement had ceased and the disease had taken on the usual incurable character.

Instead of attributing the thirty-two other cases to syphilis and to some pathological process of which we know nothing connected with that disease, I prefer to consider them the result of a simple proctitis, proliferating and contracting in its results, which may be set up by any local injury to the part, and which, once having passed the early stages, is practically incurable. Anything which causes an abrasion of the mucous membrane may cause a stricture of this variety if the abrasion goes on to ulceration and the ulceration is not cured by proper local treatment.

Again and again we have this history forced upon our attention, and it will in time be allowed its proper weight with all those who are not so overawed by the mass of authority in favor of the syphilitic idea that evidence to the contrary has no influence upon them. Constipation and local impaction, surgical operations, injury to the rectum in childbirth are some of the everyday causes of the so-called syphilitic stricture, both in those who have had and

those who have not had syphilis. Every practitioner has seen these simple lesions cause stricture of the rectum a few years later if he has watched the development of his cases. How many men have ever seen syphilis cause stricture? I do not mean how many have seen well-developed strictures and have jumped to the conclusion that they were syphilitic. Where in the body do we find any analogous syphilitic process? Neither in the air-passages nor the œsophagus, for here when we find syphilitic stricture we find contraction from cicatrices resulting from syphilitic ulceration. The deposit which causes stricture in the rectum is not gummatous either under the microscope or in its clinical history, and the name ano-rectal syphiloma, which has covered it as an all-sufficient explanation for years, has come to express nothing.

The writer does not wish to be misunderstood in this matter.

Syphilis may cause a stricture of the rectum by causing an ulceration of the mucous membrane exactly as a surgical injury or a scybalous mass may do, and in no other way. I have seen such syphilitic ulceration, and had it not promptly yielded to local and specific treatment I have no doubt that it would have caused a stricture exactly as it would have done in the œsophagus.

That syphilis has any connection or relation with stricture of the rectum except in this way we have no particle of proof. That the so-called syphilitic stricture, both in syphilitic and non-syphilitic patients, may be caused by any local injury we have daily evidence.

Of these ninety-nine strictures, forty have been treated by colotomy, twenty-four by extirpation, and eight by division.

Of the forty colotomies three have died. This statement left without explanation would give a very exaggerated idea of the mortality of the operation. Only one of the deaths was in any way due to the operation, and that one was a pure accident, and might easily have been avoided—indeed, should have been.

The first death was caused as follows: The patient, a woman, was in the midst of complete intestinal obstruction from cancerous disease. The pelvis and abdomen were full of cancerous masses, and after the incision was made it was with some difficulty that a healthy piece of sigmoid flexum and mesentery could be found in which to make the opening. After thirty-six hours the patient had a chill and high temperature and the symptoms of shock. The gut was opened, the parts found in good condition, but the opening of the bowels gave no relief, nor did any quantity of opium or bromine cause, which, considering the distressed state of the abdomen, was considered remarkable. Death followed in a few hours, and upon autopsy the obstruction was found to be unrelieved. A cancerous nodule existed at the upper flexure of the colon, which had almost completely closed the lumen. Against this there was pressing a small, hard, round mass acting as a piston ball, and which was not removed.

The second death was in no way due to the operation. The cause was one of acute phlegmonous peritonitis following the division of a stricture. After the patient was

exhausted by the disease and at the point of death a communication formed between the rectum and bladder. To do away with this additional cause of danger a colotomy was performed, but without retarding the inevitable result of the disease.

We then had a run of twenty-four successive cases without accident, and the next and last death was directly due to the operation.

The patient, as usual suffering from cancer, was in excellent condition and a favorable prognosis was given. On the second night after the operation the bandages were found soaked in serum, which had wet them through and was soaking into the bed. All night the patient was allowed to remain in this condition before the wound was examined, and I was sent for. Then it was found that many feet of small gut had escaped through the incision and were lying under the dressings. The gut was partially strangulated, deeply congested, all of the coils were matted together by plastic exudation, and the dressing of gauze was so firmly adherent to the protruding mass that an hour's careful dissection was necessary for its removal. By the time the parts had been replaced the patient was in a condition of fatal shock. This is the only case of colotomy, either in private or hospital practice, in which I consider that death could fairly be attributed to the operation. In private practice in two or three cases death has not been delayed by the operation, but in none has it been hastened.

I report this case fully as a warning. The same accident has happened before and may again, but it should never be a fatal one, and would not be if discovered early and properly managed. Sudden and profuse discharge of a large amount of serum from the abdomen after colotomy is a sign that some part of the wound has given way, and should lead to immediate removal of the dressings for inspection. If hernia be found, it is an easy matter to reduce it, and a stitch or two in the wound will keep it reduced.

From the twenty-four operations for extirpation of the rectum there have been seven deaths.

The more experience we have with this operation the more convinced are we that the use of anastomosis depends chiefly upon the technique. Of course, the same consideration must be carefully chosen. In non-malignant strictures the extent of the disease is either of such a nature that extirpation is indicated. In cases of cancer the tumor must be movable. In other words, no matter what its distance from the anus and no matter what length of gut is to be saved, the disease must be confined to the gut, and must not have spread adjacent parts, or even distant organs, or removal is unjustifiable.

The comparison of these statistics with those of other operations is difficult because of the absence of facts in the published reports. My own cases are strictly twenty-four consecutive cases, in all of which I secured perfectly healthy anastomosis. In all of them the disease, and the important condition, state of the corpus, and the nature of the case have appeared in connection, and the result was extirpation or anastomosis would have been made and the anastomosis done. It would be possible to do the same

tion twenty-four times without any mortality and with few or no recurrences within the limit of five years, but the cases would need to be carefully selected ones of epithelioma confined to a small portion of the gut and removed early.

My own experience has taught me rather to expect recovery without serious accident in a clean and antiseptic Kraske's operation when the upper end of the gut is well vitalized at the point of section and is brought out behind and stitched to the skin at the part left vacant by the removal of the end of the sacrum. Union soon takes place; faeces escape on the surface of the body and do not contaminate the wound, which may be expected to heal in part by primary union; and the patient makes a rapid recovery without high temperature.

This operation is, however, not the ideal one. The disease is removed, it is true, and the great object of operating is thus accomplished; but the after condition of the patient is not as good as after a colotomy.

It may be safely asserted that if a patient is to have an artificial anus anywhere, the best place for it is in the left inguinal region and not over the sacrum.

One great element in the mortality at this clinic has been the repeated attempts not only to remove the disease, but to put the parts in the same condition as before the operation, by uniting the divided ends of the gut and replacing the trap door formed by cutting across the sacrum. When we fail in the attempt to get immediate union of the ends of the gut the wound becomes fouled with faeces, there is suppuration, great exhaustion, and prolonged high temperature, and the patient barely escapes with life.

Attempt at immediate union of the ends of the gut should never be made unless the upper end be well vitalized and well supplied with mesentery. Where the disease has involved the upper rectum, and where after opening the peritoneum it has been necessary to dissect off and divide the mesorectum to a considerable extent to bring the gut down, it will often be found that when the gut is finally cut across above the disease all precautions against bleeding from the proximal end are unnecessary. The circulation has been so interfered with by ligatures placed upon the mesentery that the cut surface has not sufficient blood supply to bleed. Or, in non-malignant stricture, when the same section is made above the constriction the proximal end will be found infiltrated, lardaceous, grayish in color, and with few vessels. It is not to be expected in such cases that good union will take place between this end and the anal portion, no matter what particular form of suture is adopted, and the proximal end under these circumstances should simply be closed and held closed and sutured to the skin, care being taken if possible to cut off enough of that healthy gut to secure without any great traction.

This operation has been three times presented at the clinic and is well adapted to the treatment of the gut in the present condition. We have found it only another operation every body should know.

I have decided that in attempting to treat the end of the gut in the present condition, the chances of three to one—

Murphy button, end-to-end suture, and suture after invagination of the upper into the anal extremity. The proper application of the button requires that a considerable portion of the anal end of the gut has been left after removal of the stricture. It is also to be remembered that there is no peritoneal covering to the ends of the gut which assists so greatly in union within the peritoneal cavity. For this reason the ends should be well scarified where they are to come into contact when the halves of the button are pressed together, and the union should be further strengthened by a row of sutures.

In spite of all this one of our own fatal cases was due to sloughing of the upper end and extravasation of faeces into the wound.

Between end to end suture and suture after invagination the operator may choose for himself. The latter is much quicker and easier. Both will occasionally succeed and often fail, and when they fail a life will perhaps be lost which might have been saved for a time by the simpler operation of bringing the upper end of the gut out behind.

I am convinced that it is in great measure upon these points in technique as well as upon the selection of the cases that the mortality of the operation at present depends; and that the success and failures of the future will depend upon the results of careful practice and experiment along this line.

One other practical point has been forced upon the writer's attention.

In cancer of the rectum any kind of anus which may result is justifiable and desirable provided the growth can be removed. But in non-malignant stricture, as it often presents itself, especially in the old cases of so-called syphilitic stricture, the future of the operation of excision depends entirely upon the ability not only to remove the disease but to put the parts after the operation in something like the natural condition.

I do not contend for perfect faecal control, for the patients do not have that before the operation; but they must at least be left better off after the operation than before it, and better off than they would be after colotomy to compensate for the great additional risk of one operation over the other.

It is a difficult matter to choose between the comparative discomforts of an average case of old stricture; the condition following extirpation, where the gut is brought out over the sacrum or the patient is left with two openings, both discharging faeces, one the natural one and the other somewhere else near it, generally called a faecal fistula; and the condition following colotomy. Unless the conditions following extirpation in these cases can be made much better than those which follow colotomy, the operation will soon be crowded aside and we shall return to where we were a few years ago, with the only choice between colotomy, on the one hand, and proctotomy or dilatation on the other.

There is certainly no operation connected with the surgery of the rectum in which practice and skilful technique have so great a bearing upon the results.

OPEN SECTION FOR IRREDUCIBLE DISLOCATION AT THE SHOULDER JOINT.

BY W. N. KEENER, M.D.

JAMESPORT, MD.

G.M., aged about twenty-two years, very muscular, while attempting to mount an unruly horse, on June 10, 1894, sustained a dislocation of the head of the humerus. I saw him an hour or two after the accident, and learned that his father and two other able-bodied men had been trying with all their might to reduce it with the heel in the axilla. As it seemed to be an ordinary downward and forward dislocation, I expected no trouble, sat him on the floor, and undertook to reduce it by manipulation. To my surprise and chagrin I failed. After a thorough trial of this method, I called to my assistance two strong men, and, without going into details, I think we tried all known methods of reduction without success. It was my first failure in such a case, and I cast about for some explanation for my failure. I had seen but one irreducible shoulder-joint dislocation, and that was in the clinic of Professor Moses Gunn, of Chicago, in 1884. Professor Gunn explained it by saying that the head of the humerus had slipped through a button-hole slit in the capsular ligament, instead of rupturing the fibers of that ligament in the usual way. He applied sufficient force with a system of pulleys to rupture the capsular ligament, then reduction was easy. It required a great deal of force, and the patient died in about two days, as it was said, from pneumonia. Of course, this explanation and this treatment were the first to suggest themselves to me. Remembering the great force required, however, I feared injury to some of the important structures about the shoulder joint or axilla. In the face of these fears, and the additional fact that, in the light of modern aseptic surgery, joints may be safely opened, I decided that, if reduction was impossible under an anesthetic, I would make an open section. The patient being thoroughly prepared and anesthetized, another attempt at reduction was made and proved unsuccessful; so an incision was made over the pectoralis major, which, being drawn downward, revealed the head of the bone deep between the pectoralis major and minor. The capsule was not ruptured, but seemed to be pushed before the head of the bone, while, closely hugging the anatomical neck, both anteriorly and posteriorly, were large, firm, cordlike bundles of fibers reinforcing the ligament proper. The anterior was the heavier of the two. Both their humeral and scapular attachments were so close together that they were drawn very tense, and any attempt at reduction only seemed to draw them tighter.

There were both arterial and venous vessels in the capsule, easily cut open. The artery was found and pulled well out before and sealed by compression. The vein was left in its good position. The capsule was a layer of a fibrous tissue, the thickness of the skin, when relaxed. Considerable care was taken to prevent its retraction.

TUBERCULAR MENINGITIS.*

BY HERPES M. MAHER, M.D. (Yale).

NEW HAVEN, CONN.

Lesser attack of tubercular meningitis, occurring five years after the death of a child, which was an epileptic, so mild as to be that one end of the century, and the other has to face. How did the healthy child of the child's death? I have not

that they were a secondary development, that they must have been hibernating in some other part of the little one's body—that is, in the lungs, in the bones, or in the bronchial, or tracheal, or mesenteric glands. This is the explanation adopted by practically all modern medical authorities, as applicable to the great majority of cases of tubercular meningitis. But as to the question, Is tubercular meningitis ever a primary tubercular lesion? there is considerable diversity of opinion. Osler rather guardedly says, in his *Practice of Medicine*, that "in a few instances the disease seems to be primary in the meninges." P. Simon, of Nancy, last year went over this subject somewhat exhaustively in the *Revue mensuelle des maladies de l'enfance*. He is strongly of opinion that save for a possible case in which injury to the ethmoidal foramina in the upper air-passages might give inspired bacilli present in the nasal secretions immediate access to the interior of the cranium, tubercular meningitis is always a secondary development. In twenty-seven complete autopsies in cases of tubercular meningitis that he reports, he found old tubercular lesions in twenty-five cases. He quotes Orth as maintaining that there is a distinct relation of cause and effect between caseous deposits and the later development of tubercular meningitis. Reider, in the *Münchener medicinische Wochenschrift* of December, 1889, reports thirty-two cases of tubercular meningitis in almost all of which the disease was consequent to another tubercular affection.

By what avenues do the bacilli go from the cheesy nodules throughout the body to the meninges? By the blood current. The peculiar distribution of meningeal tubercle and the researches of Weigert are the proof of this answer.

It is impossible to say in every case what agency it was that disturbed the cheesy masses of the body and caused them to send out their pestiferous colonies to settle in the meninges. Sometimes it seems to be the debility following whooping cough or measles that lights up the smoldering tubercular processes. Sometimes it is trauma. Dr. Clinton, of Leeds, a few years ago read before the British Medical Association an interesting paper on the medico-legal aspect of the tubercular meningitis occurring in children after slight injury to the head; for instance, after being struck on the head by their schoolmasters.

There are some striking cases in the way of testifying to this matter. For instance, a case reported to the Local Association of Medicine at Bristol by Dr. Bennett would seem to show some modification of several points in the modern doctrine. The child, according to the *Lancet* of June 14, 1890, died at the age of six months, a child not then a case of acute tubercular meningitis, but of chronic. The disease had lasted four years, ending complete loss of intellect and partial loss of sensation in the legs. At last there was some recovery and satisfaction with increased interest, but afterward the children contracted in permanent rigidity. Four years after the paralytic attack, the spine became curved, the teeth, and some bony growths. The child was now known as a case of tubercular meningitis. Finally the patient died of tubercular meningitis. At the post-mortem examination it was found that the external surface of the dura mater was healthy,

* From a case reported in *Medical Progress in June*, following before the New Haven County Medical Society, October 10, 1894.

the internal surface was thickened. This thickening was most marked in the lower dorsal region, where there was about a sixth of an inch of tough whitish tissue growing from the dura and attached to the arachnoid and pia mater. This tissue thinned off gradually above and below. On microscopic examination this structure was seen to consist of granulation tissue containing giant cells and tubercle bacilli, and in many places had become caseous. This tissue compassed the cord in the lower dorsal region. The cord showed ascending and descending degeneration above and below the point. The ninth, tenth, and eleventh dorsal vertebræ were carious, and there was cerebral tubercular meningitis. The disease had started in the internal surface of the dura mater and the bone disease was secondary. That this was the course of the case is shown by the following facts: 1. The external surface of the dura was healthy; the internal diseased. 2. The spinal disease did not show itself till three years after the paraplegia had become complete. The unsatisfying part of this report is the neglect to state whether or not there was evidence of old tubercularization elsewhere in the body than in the spine.

The question of the etiology of tubercular meningitis is a somewhat knotty one. It may have occurred to you that not much has been written on the subject by the abler men of the profession. Dr. Landon Carter Gray, however, writes very glibly on the subject in the recently published *American Text-book of Diseases of Children*. He says on page 626: "The ætiological factors of tubercular meningitis are heredity, tubercular infection, age, and erythema nodosum. A tubercular heredity produces, of course, the tubercular manifestations in the different organs of the body, but there has never been produced any proof that tubercular meningitis is hereditary except in this general sense." What in the world can the doctor mean by that last sentence?

Well, we have traced our bacilli back to the glands, or bones, or lungs. How did they come there? Dr. Walter Carr reports (*Lancet*, May 12, 1894) on this point, so far as he was able to elucidate it by one hundred and twenty necropsies made at the Victoria Hospital upon children suffering from tubercular lesions. In four cases he could not find any primary lesion. In eleven cases cheesy nodules existed in several widely separated parts of the body, and in these he felt constrained to hold that multiple tuberculous affections might sometimes be altogether independent of one another. In thirteen children the tuberculous mischief was confined to the glands, in seven to the bronchial, in eight to the mesenteric, and in one to both sets. Ninety-three cases out of these, the mischief apparently began in or was limited to the bones or joints, in seven (including three of middle ear disease), in forty-seven it commenced in the thoracic glands, in thirteen on the lungs, in eight in the lymphatic glands, in three in the mesenteric glands, and in two in the brain. There is a summary report of the evidence as to the mode and importance of transmission, he holds, (1) that a primary focus in the lungs or intestine causes a direct bone infection; (2) that the bacilli pass through the lymph

or the internal walls without producing any recognizable lesion, and that they then, at least as a rule, enter the lymphatic vessels and not the blood-vessels; and (3) that a primary tuberculous lesion in the mesenteric or bronchial glands is due usually to bacilli which have entered through the intestine or lung, respectively, and not at some remote point. He holds, further, that the bronchial were more frequently affected than the mesenteric glands, and that therefore the original entrance of the bacilli to the system of children was more frequently through the lungs than through the food tract. This conclusion, though in accord with the researches of Killiet and Barthez, and Simmonds and Walter Coleman, is opposed by those of Dr. Sims Woodhead, who found in one hundred and twenty seven autopsies of tubercular children that the bronchial glands were caseous in ninety-six cases and the mesenteric in one hundred cases, and the mesenteric alone in fourteen cases. We have now seen that the children who die of tubercular meningitis usually receive the tubercle bacilli in the air that enters their lungs or in the food that enters their stomachs. Are the bacilli never inherited? Osler, in the *American Text-book of Diseases of Children*, puts the answer well: "Current opinion on this point may be expressed as follows: While in a few cases tuberculosis is transmitted directly from parent to offspring, in the great majority of all cases the heredity does not relate to the transmission of the seed, but of a disposition of body, a type of tissue cell favorable to the development of the disease in case of accidental infection."

You have heard an enumeration of the symptoms that are to be found in children who have simple meningitis and in those who have cerebro-spinal meningitis. The symptoms of tubercular meningitis are like unto them. The symptoms of tubercular meningitis vary, as do those of simple and cerebro-spinal meningitis, according to the location and amount of the effusion and the degree of poisoning from the products of the bacteria that cause the inflammation. From the fact that usually tubercular inflammation is situated at the base of the brain, we should expect, and correctly, various and complicated interference with motion and sensation and function of different parts of the body. From the comparatively slow development of tubercle bacilli we would expect, and correctly, that an inflammation produced by them would have longer and more deceptive prodromata than one caused by the pneumococci, for instance.

Usually for a few days or weeks, occasionally months, the mother of the patient notices that it does not look well, is cross or strangely apathetic, and is "losing its appetite." There is little or no fever yet. Then there comes sudden and repeated and unexplainable vomiting, accompanied by rise of temperature and an intense headache and possibly a convulsion. The pain in the head is usually referred to the forehead. Sometimes it is paroxysmal and causes the sufferer to utter sudden loud shrieks, the "hydrocephalic cries" of olden literature. The slightest sounds annoy and there is photophobia. Contracted pupils are the rule; rhachialgia is occasional and constipation usual. The expression is frowning. A quieter period fol-

lows of rather indefinite length. The patient loses the sense of pain. The muscles in the back of the neck contract and the head "bores into the pillow." General or partial convulsions, or stupid delirium, dilating pupils and strabismus, irregular pyrexia and pulse rate, the *tache cérébrale*, patches of erythema, the carinated abdomen, are commonly features of this stage. A rapid pulse, convulsions, dilated pupils, optic neuritis, loss of control of the sphincters, ptosis, a temperature ranging from 93° to 106° F., mixed palsies and paralysis, and more or less profound coma precede death.

From the symptoms produced by the inflammation of the meninges alone it is impossible to say whether a given case of meningitis is tubercular or simple or cerebro-spinal. But there is usually plenty of circumstantial evidence to aid in the diagnosis. A thorough physical examination of the child for evidence of tubercle or injury; the previous history of the patient, with particular reference to the recent occurrence of measles or whooping-cough or any of the debilitating diseases of childhood; the prevalence or absence in the neighborhood of an epidemic of cerebro-spinal meningitis, will be of more assistance than any set of symptoms. It should always be remembered that tubercular meningitis is altogether the most common variety. The physician who, in doubtful cases of meningitis, certifies to death from cerebro-spinal fever not only unreasonably startles the community, but he is very likely to be made uncomfortable by the revelations of the deadhouse.

The prophylaxis of tubercular meningitis is twofold: (1) The prevention of primary tuberculosis; into that subject I can not go. (2) The curing of primary tuberculosis. It is clearly our duty to give serious attention to the cheesy glands of children, however few and slight may be the subjective symptoms to which they give rise, and to use every means at our command, surgical and medical, to snatch our little patients from the fate that threatens them while they carry about with them nests of tubercle bacilli.

As to treatment, if we can not find positive evidence of tubercular deposits elsewhere in the body we should be justified in hoping that it was not the tubercle bacillus, but some less fatal bacterium that had attacked the meninges, and was now causing the headache and spasm and delirium or stupor, or whatever symptoms the patient might have; and on that supposition we might resort to more active therapeutic, but not blistering, I hope, and not too much freezing with ice-caps. But if we have tubercular deposits elsewhere in the body and a meningitis is now developing, it is barbarous to torment the dying child. He should be put in a quiet, darkened room, treated symptomatically, and permitted to die. In as much pain as a patient under the circumstances. Acting on the theory that it was the compression of the brain by the effusion that was the actual cause of death in tubercular meningitis, many able surgeons have performed operations to relieve the intracranial pressure. But although they have sometimes given temporary relief from some of the symptoms, they can bring about permanent relief, life or even apparently in prolonging it.

It is recommended, according to our present knowledge, that a patient with tubercular meningitis not receive

Therefore, although several cases of recovery have been reported, the reporters are believed to have made errors of diagnosis. Only when we have discovered an agent that will do for the tubercle bacillus what quinine does for the protozoa of malaria can we hope for the cure of tubercular meningitis. That agent we may have this year or next, or it may be reserved for the twentieth century; but we all feel that it can not for long elude the faithful, heroic search that is now made for it the world over by thousands of the keenest minds and most skillful hands that have ever been vouchsafed to the human kind.

512 ELAND STREET

REMARKS AT THE ANNUAL MEETING OF THE NEW YORK SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

January 11, 1895.

By ELLSWORTH ELIOT, A. M., M. D.,

PRESIDENT OF THE SOCIETY.

ALTHOUGH the printed statement of our treasurer, which has been sent to the members, sets forth very fully the present condition of our society, you will not think it improper for your president to mention a few facts which have an important bearing upon its history during the past year.

1. Our membership has increased, but it is not equal to that of 1881, when there were a hundred and forty-nine names on the list. In 1892 it had decreased to a hundred and thirty. By a slight effort we could not only hold our own but make additions annually.

2. We have increased our principal by nearly \$6,000 to \$195,126.03. It would not be easy to find a benevolent society the financial record of which costs so little as ours—\$167.29.

3. We have succeeded in investing all our funds—a portion thereof at a low rate: four and a half per cent. only; but absolute safety has been the paramount consideration with your standing committee who have this matter in charge. A year ago we had in a trust company \$22,000 at one and a half per cent. Never have we had so little as now—less than \$2,000—on account of which it will be required for the annuities due the first of next January.

4. In the last of the money placed in the annual report of our treasury, appears the name of Abner Clark, whose gift to the society is estimated at \$25,000. By the death of one of his children during the past year the society has more than 100 per cent. of property already exceeding this amount, and in course of time more additions will be made. Probably his gift is not all and is less than \$25,000. Great is his generous spirit in his willingness and given to the government with Dr. Clark his name having all the real money now in his hands, he saving the 40 per cent. who have given legacies to our society, as he does as there are numbers of graciously so doing.

5. Several have inquired how our society compares with the London society in members, in possessions, and in

property. By the last report, that society has three hundred and eight members, this being somewhat less than the membership of the previous year. The number of widows relieved was fifty-four, and the number of children nine. Should we have a number proportionately large, it would be necessary to make a large deduction from the annuities now paid. Their property amounts to about \$450,000. As their society is more than a hundred years old, and ours is but little more than fifty, our pecuniary condition can not be unfavorably compared with theirs. Of one thing we can boast: A certain amount is distributed among the members of their board of directors for attending meetings. Our board of managers attend punctually, without pecuniary consideration. A quorum is always present at the appointed hour, so that the business can be expeditiously and in brief time discharged.

6. By an act of the assembly of the State, passed last winter, our society will be enabled to extend its relief to a wider circle than our by-laws now permit. Some alterations in these will probably receive early attention from our board of managers.

LATERAL DECUBITUS AS A CAUSE AND AS A METHOD OF TREATMENT OF LATERAL CURVATURE OF THE SPINE.

By N. WILBUR, M.D.,
PHYSICIAN-IN-CHIEF, N. Y.

THE subject of lateral curvature of the spine has always been of some interest to me from the fact that I have suffered from the deformity myself. Some years ago, in thinking about the cause of the curvature in my own case, I concluded that it arose from the habit I had formed of always sleeping on one side. Since that time I have found that all the cases I have seen—three in number—have had this same habit, and from the circumstances in each case I was convinced that this was the cause of the curvature. In all the curvature conformed to the position occupied in bed.

It is only within recent years that lateral decubitus has been recognized as a cause of lateral curvature, and I doubt if its importance has ever been fully appreciated. If inquired of me, I presume that a large portion of the cases will be found to arise from this cause.

The hips and shoulders are the most prominent parts of the body when viewed laterally, and when a person lies on his side there is a sagging down of the body between these points, and as the dorsal portion of the spine is most flexible, the curvature is most in that region. Place any one on his side and you will see that this position crooks the spine.

The prevailing opinion at the present time is that lateral curvature arises from the maintenance of some one-sided position, and there is no other recognized position that is kept for so great a portion of the twenty-four hours as this. It is those that have the habit of sleeping on one side.

The spine, from being always kept in this position at night, comes into three curved shapes. The intercostal

discs, the ligaments, the muscles, and the bones themselves, according to a law of Nature, become adapted to this position, and any method of treatment that will be effective must be of long continuance so as to allow the spine to grow into its normal shape again. The recognition of lateral decubitus as a cause suggests just such a plan of treatment. Persuade the patient to sleep on his other side and he can thereby grow straight again. By reversing the position the spine is not simply straightened, but it is bent over in the opposite direction, which is more effective.

This plan of treatment is equally applicable to cases that may be supposed to arise from other causes, and a special reason for its use is found in the fact that patients generally sleep on the side of the higher shoulder, no matter what the starting point of the curvature may have been. The curved position becomes natural to them, and they take it because it is more comfortable whenever relieved from the necessity of maintaining an upright position, as when sitting or standing. I can bear testimony to the peculiar sense of ease and comfort that comes over one with lateral curvature when he assumes his accustomed position. Lateral decubitus may thus be considered a consequence as well as a cause of lateral curvature. Hence we should in all cases inquire if this habit exists, and if it does we must take it into consideration, for it is apparent that no progress can be made toward removing the deformity if we straighten the spine during the day and allow it to be curved at night.

In certain cases, in addition to this treatment by position, the muscles need strengthening by gymnastic exercises and a general tonic course of treatment. This is required when the patient has backache. When there is no lateral curvature but little effort is required of the muscles to balance the body, but after it has occurred, when the individual is in an upright position, the muscles try to hold the spine erect against the tendency of gravity to pull it over still more. If the muscles are unequal to the task the patient will have backache, which thus becomes an indication for gymnastic exercises; but if there is no backache, gymnastic exercises are unnecessary.

The younger the patient the more quickly will the curvature be overcome. Although ossification is not completed in the spinal column till the thirtieth year of age, it is far advanced at twenty, and the most brilliant results will be achieved at or before that age. Yet in middle life this treatment by position will effect something, as I know from my own experience. Till I made use of it, my coats required padding over one shoulder to make them fit; after occupying the other side at night for about three years this padding was no longer needed, and my back became very much stronger, but the curvature is not wholly removed.

I will add a brief account of the three cases mentioned, mainly to show the difficulty in carrying out this treatment:

CASE I.—Two years ago, Miss W., then fifteen years of age, who had always been strong and healthy, had decided curvature of the spine. She presented no symptoms, but wished to be removed of the deformity. The left shoulder was the higher. She had the habit of sleeping on her left side, with her head

and shoulder resting on a large pillow. She was directed to sleep on her other side, and carry up the right shoulder so as to occupy a similar position to that previously occupied on the left side. With some difficulty she acquired the habit of sleeping on her right side, but the shoulders held the same relative position as before; the right one was still depressed. This was the situation a year after she was first seen, and the deformity, instead of being benefited by the change of position, was rather aggravated. After this she succeeded in carrying up the right shoulder, and thereafter the improvement was rapid. Six months afterward, on a careful examination, no curvature existed.

CASE II.—In October, 1890, Miss C., twenty years of age, consulted me on account of backache and great weariness on exertion. I found lateral curvature of the spine, with the left shoulder one inch higher than the right. She always slept on her right side with her right shoulder depressed, an exceptional position. In fact, she occupied the same position as Case I during the first year of treatment.

Following my directions, she acquired the habit of sleeping on her left side at once, occupying the same relative position as she had previously done on the other side. She forced herself to do this by tying herself in bed so that if she turned on her right side in her sleep she would be awakened. I advised at the same time a course of physical exercises, and gave her the first lesson. She failed to carry out this part of the treatment, but continued to occupy the new position at night.

A year afterward her dressmaker, who had previously been obliged to shape the two sides of her dresses differently, now made them alike, and a teacher of physical culture who examined her class, of which my patient became a member, with a view of adapting her exercises to overcome any deformity that might exist, found no lateral curvature in this young lady.

Case III.—In May, 1880, I was visiting a patient, Miss C., latter, when a neighbor of my patient, Miss W., sixteen years of age, a strong German girl, was brought to me on account of a tumor that was growing over her right shoulder blade. I explained that the tumor was caused by curvature and rotation of the spine. I learned that she always slept on her right side, with her head and shoulder well bolstered up with pillows. I considered that the cause of the disease lay in her position of sleeping. Her parents told me that she always slept on her right side, and I pointed out that she gave no reason for always sleeping on her right side that she could not bear to lie facing the wall.

I found nothing more from her till August 1890 when I learned that she attempted to leave home to carry out my directions. This was of no consequence then, since I did not know her and her family, assuming, surely, to do as I said, and that did not accept my assumption at the time. They went to England and consulted the late Dr. Frank McCann, a well-known physician and friend of mine, at Leeds, in which I never saw him, who, after long and serious thought, and some consultation with me, gave them his certificate, and they went back.

At this time, I made the *explanation* of treatment and prognosis was made to satisfy the . . . She really got to know me but I said, but inevitably found herself on her right side when she awoke and the limb compressed her midline in causing an ischuria. As a consequence, an emergency incision into the abdomen was performed for her comfort with the hope of relieving the pain and if the shop was not found it will give no outcome. And the patient of the same was admitted to the general surgery department and I have been accompanying it.

Changes of Address.—(A) S. D. Easton from Highland
N.Y., to Mount Zion, Ill.; To, Frank N. Lewis, ex-
Hillsdale Street, New York

NEW YORK MEDICAL JOURNAL

A Work, Review of Missions.

10. *Alpinia* *sp.* *sp.*

[illegible]

NEW YORK, SATURDAY, DECEMBER 5, 1894.

CHLORALOSE IN THE TREATMENT OF NIGHT SWEATS

Night sweats and sleeplessness, as is well known, are among the more tormenting of the manifestations of chronic pulmonary disease. They are often associated, consequently it is an object to use a remedy capable of overcoming or modifying both of them at the same time. Such a remedy M. J. Scauze thinks is to be found in chloralose. In an article on the subject pub-

6th he refers to a previous communication of his relating to clinical cases observed in Professor Grasset's service. According to M. Scaze's observations, in persons affected with an advanced stage of pulmonary consumption the insomnia and the night sweats have disappeared almost completely under the influence of chloralose, and in a few cases the improvement has continued after only a few doses of the remedy had been taken, although as a rule the symptoms have returned when the use of the drug was suspended. In a very small number of cases this action of the drug is very slight, and, indeed, in exceptional cases, far from inducing sleep, it produces excitement and worrying dreams. Exactly why there should be this difference in its action in these cases, the author says is unknown. At all events, it would be rash to conclude from the beneficial action of chloralose in the night sweats of chronic pulmonary disease that it would act also in cases of profuse perspiration due to nervous derangements or to the action of such sudorific drugs as pilocarpine, and perhaps it is because this has been expected of it that some writers, founding their opinions on its failure under such circumstances, have doubted its efficacy as an antidirotic. We do not yet know, says M. Scaze, whether chloralose controls profuse sweating by a direct action on the sweat glands, or whether it acts through the medium of the nervous centers,

place within the lungs. As to this point, however, there are

The author has experimented with chloralose in various doses, but in the present case, using 0.005 g per 100 g of water is recommended. In 48 hours, 400 g of water has evaporated and has been dried out, becoming 100 g of 100% dry material, and the right quantity of chloralose of 5 g must be added to the remaining 100 g of dry material. In some cases, the water may be evaporated out, and the chloralose may be added to the dry material, but this is not recommended. In the present case, the drying of chloralose should be avoided, as the chloralose should be added to the water. The chloralose should be added to the water, and the water should be evaporated out, and the chloralose should be added to the dry material. The chloralose should be added to the water, and the water should be evaporated out, and the chloralose should be added to the dry material.

With regard to the administration of chloralose, in order to avoid toxic effects, the author begins with the use of capsules, each containing three quarters of a grain. One of these capsules is to be taken, and, if at the end of half an hour sleep has not been induced, another may be given, and two more, if necessary, at intervals of half an hour. When the insomnia is very obstinate the dose may be increased to a grain and a half, but not more than four such doses should be given in the course of a single night. Moreover, in such cases it is sometimes advisable to give capsules containing, each, three quarters of a grain of chloralose and from two to three grains of sulphonal, and, if there are febrile movements toward evening, it is well to add a small quantity of quinine. The author has experimented largely with these combinations, and has observed good results from them. As chloralose is almost always given in small doses, he says, it has rarely given rise to accidents, and when these have occurred they have not been of a very serious nature. Moreover, the small size of the dose required admits of the continued use of the remedy for days together, according to the persistence of the symptoms that indicate its employment. Finally, M. Sacaze thinks that chloralose seems worthy to rank with atropine, ergot, and agaric in the treatment of the night sweats of consumptives, and all the more from the fact that it answers two indications at the same time, that of overcoming sleeplessness and that of mitigating the sweating.

THE NEW YORK SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

Is no city in the world is mutual aid for medical men so well organized as in New York. The Physicians' Mutual Aid Association offers relief to its members during their lifetime and provides almost immediate financial assistance for their families or dependent relatives after their death, while the Society for the Relief of Widows and Orphans of Medical Men places a member's widow and orphans beyond the possibility of poverty and want. In fact, we may say that we know of no profession or calling that offers such means of relief for those dependent upon its worthy members for so moderate an expenditure as is required by these two societies for physicians.

In another column in this issue of the *Journal* we publish the annual address of the president of the society whose name heads this article. His review of the present status of the society shows a record of which the officers may well be proud. Almost two hundred thousand dollars in assets acquired in fifty-two years! How important of the ease with which the funds have been raised, how worthy a tribute to the benevolent physicians whose donations have increased the capital of the society to more than fifty thousand dollars, how pregnant with good for the future and the welfare of the future!

It is good news that every respectable physician in New York should be a member of this society. If not for the sake of the good that it accomplishes at least for the personal notice of providing for all possible contingencies relating to the welfare of dependent relatives. For it is the purpose of the so-

ciety to so amend its by-laws that it will be possible to afford relief to a father, mother, or sister dependent upon a physician who has not seen fit "to take unto himself a wife." Of the three thousand physicians in this city at least fifteen hundred are eligible for membership in the society, and yet less than ten per cent. of the latter number will include the actual membership. This should not be the case, for no man can feel assured that the estate he may leave will be so well administered that his family will never be reduced to want.

The society does not furnish life insurance, but rather insurance against the possibility of penury and want in those unaccustomed to struggle for a livelihood. For a physician having a family it would seem to be a duty to secure this assurance for his family's welfare, happen what may. We commend this organization to the thoughtful consideration of our readers, and we trust that the coming year will witness a decided increase in the society's membership.

MINOR PARAGRAPHS.

AN AFTER-INCIDENT OF THE HOT SPRINGS MEETING.

In our last issue we alluded to the kindness shown by Mrs. Hay, the wife of the manager of the Arlington Hotel, Hot Springs, to the ladies who accompanied the members of the Mississippi Valley Medical Association on the occasion of its recent meeting in Hot Springs. In recognition of that kindness, some of the ladies sent to Mrs. Hay from St. Louis a present in the shape of a breast-pin. Mrs. Hay now acknowledges the gift in the following terms:

"On November 23d the wheels and flying sparks took from me the most enthusiastic and charming assembly of people it has ever been my good fortune to know, and after many miles lay between us I received an exquisite token—a circular pin—of richest gold with a diamond in the center; its rays showed me plainly the brilliancy of the givers. I thank you many times."

STRANGULATION OF THE PENIS.

In the *Centralblatt für Gynäkologie* for November 24th there is an abstract, by Dr. F. Nengebauer, of an account, contributed to the Russian journal *Akuszorka* by Dr. Korzenowski, of a case in which a drunken midwife tied a newborn child's penis instead of the umbilical cord. Dr. Nengebauer adds brief statements of two cases of strangulation of the penis by means of women's hair. One was that of a boy affected with nocturnal incontinence of urine who slept in the same bed with an older sister. A cousin paid the family a visit, and she too occupied the same bed. In order that the bed might be kept dry during the night, the girls tied hairs about the little fellow's penis. The other case was one in which a prostitute tied a drunken student's penis with a hair in order to occasion erection. In all three of these cases great swelling and pain followed, and the services of a surgeon were required.

A NEW YORK PHYSICIAN IN PARIS.

The *Progres medical* for November 2d recounts that Dr. Lusk, of New York, was present at a recent meeting of the Paris Academy of Medicine and was introduced by the president of that body. The account goes on to speak of Dr. Lusk's appointments in New York and of his great reputation. It

then says that he is an ardent traveler, "in spite of his age." To New Yorkers, to whom Dr. Lusk's youthful appearance is familiar, this will prove amusing. The writer remarks upon the striking resemblance of Dr. Lusk to Professor Cornill. He adds that Dr. Lusk is a true American, and suggests that the learned bodies of France would do themselves an honor by opening their portals to this friend of France and of Paris.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 4, 1894:

DISEASES.	Week ending Nov. 30.		Week ending Dec. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.	21	5	22	7
Scarlet fever.	87	7	78	7
Cerebro-spinal meningitis.	1	1	3	1
Measles.	48	4	60	2
Diphtheria.	189	57	188	61
Small-pox.	2	3	16	1
Tuberculosis.	158	112	99	91

The New York Academy of Medicine.—At the last general meeting, on Thursday evening, the 6th inst., a paper entitled *The Treatment of Diphtheria, including Serum Therapy*, was to be read by Dr. H. W. Berg.

At the next meeting of the Section in General Surgery, on Monday evening, the 10th inst., a paper entitled Cases of Appendicitis Treated by the Inch-and-a-Half Incision, will be read by Dr. R. T. Morris, and patients will be presented by Dr. Wyeth, Dr. Kammerer, and Dr. Morris. Instruments and pathological specimens will be exhibited.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 14th inst., a paper on "Early Experience in the Effort of Simultaneous Ligation of Both Internal Iliac Arteries for Hypertrophy of the Prostate Gland" will be read by Dr. Willy Meyer; also one on "Extreme Dilatation in the Treatment of Urethral Stricture and Chronic Urethral Discharges," by Dr. J. B. Tuttle. Dr. B. E. Vaughan will present a Case of "Hypertrophy of the Testes," and describe an Operation for the Radical Cure of Varicocele. There will be in addition an exhibition of pathological specimens and of instruments.

At the next meeting of the Section in Pasadena, on Thursday evening the 14th inst. the following subjects will be discussed: Typhoid Fever in Children, by Dr. F. C. Campbell and Occurrence, by Dr. W. P. Northrup; Enteric Fever in Children and Infants, a Clinical Study, by Dr. W. L. Stewart; the Treatment and Management, by Dr. H. H. Cogan.

The Seton Hospital for Consumptives, at Spuyten Duyvel, having two hundred beds, will be opened for patients early in January. Dr. J. West Kennard is the physician in chief. The institution is not designed for the reception of persons whose health is advanced in consumption.

St. Francis Hospital—Dr. John Thomson (and family) represented a valuable laboratory for this research.

Marine-Hospital Service.—Annual List of the Surgeons, Assistants, and Dispensary Medical Officers of the United States Marine-Hospital Service for the Fifth Year, ending November 30, 1894.

MEYER, R. D., foreman. To proceed to Rio de Janeiro, Brazil, and return via Miami. Leaving 10/20/64.

assume command of service. November 17, 1894. Granted leave of absence for fifteen days. November 20, 1894.

WASDEN, EUGENE, Passed Assistant Surgeon. To proceed to Pittsburgh, Pa., and assume command of service. November 21, 1894.

WILLIAMS, L. L., Passed Assistant Surgeon. Granted leave of absence for sixteen days. November 20, 1894.

MAGRUDER, G. M., Passed Assistant Surgeon. To proceed to Galveston, Tex., and assume command of service. November 21, 1894.

KINYOBN, J. J., Passed Assistant Surgeon. Granted leave of absence for six days. November 26, 1894.

PERRY, T. B., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 20, 1894.

GOODWIN, H. T., Passed Assistant Surgeon. To proceed to Cincinnati, Ohio, to inspect unserviceable property. November 20, 1894.

GUITERAS, G. M., Passed Assistant Surgeon. Granted leave of absence for ten days. November 28, 1894.

GEDDINGS, H. D., Passed Assistant Surgeon. To proceed to South Atlantic Quarantine and assume command of station. November 21, 1894.

PERRY, J. C., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 24, 1894.

YOUNG, G. B., Passed Assistant Surgeon. Granted leave of absence for ten days. November 20, 1894.

STRAYER, EDGAR, Assistant Surgeon. To proceed to Boston, Mass., for duty. November 22, 1894.

BLUE, RUPERT, Assistant Surgeon. To proceed to Charleston, S. C., for temporary duty. November 21, 1894.

PROCHAZKA, EMIL, Assistant Surgeon. Leave of absence granted November 14, 1894, canceled November 26, 1894.

THOMAS, A. R., Assistant Surgeon. To rejoin station (St. Louis, Mo.). November 16, 1894.

CUMMING, H. S., Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty. November 22, 1894. Granted for a period of 30 days. November 27, 1894.

Society Meetings for the Coming Week:

Medical, *Journal of the* New York Academy of Medicine (Association in General Surgery); New York Obstetrical Society (private); New York Medico-historical Society (private); New York Academy of Science (Association in Chemistry and Technology); Boston Society for Medical Improvement; Gynecological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Jersey Medical and Surgical Society, New York (private); Baltimore Medical Association.

JOHNS, *James* (Dr.) (New York Academy of Medicine
(Section in Therapeutics) Secretary, New York Medical
Union (private); Kings County, N. Y., Medical Association;
Medical Society of the Borough of Queens (private)
—Oswego) and Ulster (quarterly), N. Y.; Newark, N. J.,
Medical Association; Jersey City, N. J., Medical Association
(private); Queens Society of the Borough of Queens
(monthly and quarterly); Miami, N. Y., County Medical
Society; New York, N. Y., New York Medical Society of
the Borough of Queens (quarterly) and Queens (Soc-
iety Practitioners' Club, Richmond, Ky.

Synonymy, *Demarcus* (fish). *East Asia*, Philadelphia Academy, New York Zoological Society, Marine Invertebrate Museum, East Asia Institute, University Museum, Society of the Field of East Asia. *Marine Invertebrate Museum of the University of Pennsylvania and Philadelphia, N. Y., Philadelphia Marine Museum, American Museum of Natural History, Marine Museum*.

THURSDAY, December 14th: New York Academy of Medicine (Section in Paediatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society (annual); Medical Society of the County of Cayuga (semi-annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, December 14th: Yorkville Medical Association, New York (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Brooklyn Dermatological and Genito-urinary Society (private).

SATURDAY, December 15th: Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Born.

SHANNON.—In New York, on Tuesday, November 20th, to Dr. and Mrs. William Shannon, a daughter.

Married.

FOSTER SAVAGE.—In Summit, N. J., at Calvary Church, on Wednesday, November 14th, Dr. Matthias L. Foster, of New York, and Miss Constance H. Savage, of Summit.

SCHULTZ COLE.—In Paris, on Wednesday, October 17th, Dr. Winslow W. Skinner, formerly of New York, and Made-moiselle Marie E. Colie.

Died.

BROCKWAY.—At his home, at No. 181 West One-hundred-and-thirty-fourth Street, New York, on Wednesday, November 28th, Dr. William Gay Brockway, aged thirty-four years.

BRUSH.—In Colorado Springs, on November 29th, Medical Inspector George R. Brush, of the navy, aged fifty-nine years.

Letters to the Editor.

INTESTINAL ANASTOMOSIS.

New York, December 2, 1894.

To the Editor of the New York Medical Journal:

THE INFORMATION which you have furnished regarding anastomosis, published in your journal of December 1st, there appeared a curious question in Professor Murphy's of the objection that I made to his button. Permit me to reply that Professor Murphy's statement is a misstatement of the facts. In a case of intestinal anastomosis, the two ends of the intestine are brought together and the gap is filled with the button, and the two ends are then sutured together. The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together.

The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together. The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together. The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together.

The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together. The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together.

The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together. The button is not sutured to the intestine, but is sutured to the intestine and the two ends are then sutured together.

Contusion and Rupture of the Blom (New York Medical Journal, December 9, 1893, page 702) was overlooked.

FREDERICK HOLME WIGGIN, M.D.

A WARNING.

72 WEST EIGHTY-SECOND STREET, NEW YORK, December 1, 1894.

To the Editor of the New York Medical Journal:

SIR: I desire to warn the profession against a man, white, about thirty years old, medium height, large features, a brown mustache, and who was suffering from a nervous affection, shown by twitching of the eyelids and a tremor of the hands, who was dressed in a long brown overcoat, black trousers, black derby, wore gloves, and carried a silver-headed umbrella. He called at my house last evening, was alone in the room for about three minutes, and when I entered he exclaimed, "Why, doctor, I guess I have gotten in the wrong place, I want to see Dr. —," mentioning my neighbor two doors nearer the avenue. I naturally gave him the doctor's number, and he bid me good evening, apologizing for the intrusion. Five minutes after he left, I missed some silver articles from a table in the room. He was undoubtedly an expert, as he only took what was genuine.

It is needless to say that he did not call on the doctor two doors below, but he may yet, for it is most probable that he will make the rounds of the profession.

HARRY M. ARCHER, M.D.

MALTOSE VERSUS GLUCOSE.

SPRINGFIELD, MASS., November 16, 1894.

To the Editor of the New York Medical Journal:

SIR: In reading the article, Maltose versus Glucose, by Dr. R. G. Eccles, in your issue of November 3d inst., I was impressed by what seemed to my benighted understanding one or two inaccuracies and an overstatement. In the first place, he assumes that gastric juice has no action on bread unless it be previously acted upon by ptyalin, which I think is not correct. For he states, speaking of the American habit of bolting food: "The ptyalin does not get mixed with the food, the starch is not digested from around the gluten, the pepsin can not do its work, and disease is the consequence." Again: "As an artificial aid to digestion pepsin fails because it can not get at the gluten of the bread, because it is buried in starch. Digest this starch with added diastase and the evil is overcome."

Now I most respectfully submit, firstly, the gastric juice can digest the gluten; and secondly, there is no such thing as a distinct layer of starch covering the gluten of bread and separating it from the gastric juice as the doctor states. Moreover, what if the stomach fails to digest the gluten of bread, which is only about 1/100 in a hundred parts of wheat and a much less ratio of the bread? Disease need not necessarily follow, for has he not told us, speaking of the pancreatic ferments, that "amyllopsin takes the place of ptyalin and digests albuminoids"? It would seem *a priori* that if the stomach thoroughly and completely digested the other albuminoids—*e. g.*, meat, eggs, casein, etc.—it was doing very well. The two ferments mentioned ought to be able to manage this one kind, bread and its gluten, and were the stomach to thoroughly and completely digest all the alimentary matters, then these ferments would be superfluous. I contend, as I have before stated, that the gluten of bread is not covered by a distinct layer of starch, so as to render it inaccessible to the gastric juice. The walls of the little sacs of cells which form a large portion of the loaf of bread are made so thin that the gluten to prevent

Castration for Hypertrophied Prostate; Removal of the Head of the Femur for Dislocation into the Lesser Sciatic Notch; Trephining for Pressure as a Result of Fluid in Acute Cerebral Meningitis.—Dr. RICKETTS read a paper in which he gave histories of such cases. In the case of castration for hypertrophied prostate he had been inclined at first to do prostatectomy, possibly combining the suprapubic and perineal operations. After thoroughly considering the matter and explaining to the patient the probable results of the various operations, however, he had decided to remove the testicles. On the second day after the operation the patient had said that he could urinate with greater ease, that the pain was slight, and that he could sleep four hours at a time during the night, whereas formerly he had been getting up every hour.

The second was reported to show how little was known of what might have taken place within a mass of muscular and adipose tissue. It had been said that all operations upon the abdomen were exploratory, and it might well be said that a positive diagnosis could not be made in cases of fracture or dislocation without an exploratory incision. The question therefore arose, What was our duty to ourselves and our patients in these complicated fractures and dislocations, where doubt existed as to their character? Especially might this question be asked where the results were not what might have been expected.

Commenting upon the third case, the author spoke of the importance of draining on each side of the head.

Dr. MOYER, speaking of the third case, dissented from the statement that the arachnoid should be drained from each side; he thought it better to drain from one side only, with the addition of drainage of the lateral ventricle.

Dr. B. LEWIS, of St. Louis, remarked that credit should be given to Dr. J. W. White, of Philadelphia, for his early advocacy of castration as a remedy for prostatic enlargement.

Tumor Albus of the Knee Joint.—Dr. WILLIAM E. WIRT, of Cleveland, read a paper containing a summary of the points to be observed in the treatment, and calling attention to the fact that most excellent results were obtained by the use of conservative measures—such as counter-irritation, fixation, protection, rest, and the correction of deformity.

Resection of the Knee for Separation of the Lower Epiphysis of the Femur.—Dr. A. H. MEISENBACH, of St. Louis, read a paper in which, after reviewing the part played by injuries of various sorts and by disease in giving rise to diastasis, he presented a case of two years' standing in a child thirteen years old. The specimen was shown and the conditions were further pointed up by means of diagrams. The displacement had been in a backward direction, as was generally the case. The operation had been by means of bilateral longitudinal incisions, and an oblique transverse cut.

Colles's Fracture was the subject of a paper by Dr. J. E. JANE, of Terre Haute, Ind., who demonstrated his use of an oblique incision of pads.

(To be concluded.)

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting at October 3, 1894.

The President, Dr. C. C. BARROWS, in the Chair.

The meeting opened with Dr. F. H. WIGGINS, speaking as follows: "Gentlemen, this Society of Alumni of Bellevue Hospital has been organized for the purpose of maintaining a friendly intercourse between those who have graduated from this hospital, and of promoting the interests of the hospital itself. I have the honor to announce to you that the first meeting of the Society was held on October 3, 1894, and that the first business of the Society was the election of officers and the adoption of a constitution. The first meeting was held in the room of the Society of Alumni of Bellevue Hospital, and the first business of the Society was the election of officers and the adoption of a constitution. The first meeting was held in the room of the Society of Alumni of Bellevue Hospital, and the first business of the Society was the election of officers and the adoption of a constitution."

unusual proportion of talented men, many of whom occupied prominent public positions, but who, from one reason or another, but mainly because they had never been asked, were taking little interest in the active work of the society. It was requested that the attendance should be more regular and prompt; that more interesting cases and specimens with written histories should be presented; that all manuscript should be ready for publication the evening when read, thus insuring prompt publication with the discussion, arrangements having been made with the *New York Medical Journal* to that end. It was further requested that those willing to write papers or to take part in the discussions should send in their names.

That the response to this appeal was gratifying, it is only necessary to recall the names of those gentlemen who, during the past winter, took part in the society's work. These were Dr. Gouley, Dr. Charles Phelps, Dr. A. A. Smith, Dr. Eldridge, Dr. Page, Dr. Dennis, Dr. Bryant, Dr. Le Fevre, Dr. Parker, Dr. Syns, Dr. Barrows, Dr. Grandin, Dr. Byron, Dr. Edgar, Dr. Herman, Dr. Biggs, Dr. Kalish, and Dr. Winters. Surely a goodly company of which any society might well be proud.

The thanks of the society are especially due to Dr. Robert J. Carlisle for his work in connection with the history or account, as he modestly termed it, of Bellevue Hospital which was published during the year by this society, also to Dr. Gouley, the energetic chairman of the special committee on the revision of the constitution and by-laws, for the wisdom and labor expended thereon, and the resulting attractive booklet which has recently been placed in the hands of every living alumnus of Bellevue Hospital, for the purpose of showing them what the society is and what it has accomplished. That this has had its effect the increased number of applications for membership recently received proves.

Your society has prospered in other ways. Its membership has increased and now numbers all told a hundred and ninety-nine, of which were added during the past year nine resident, seven non-resident, one associate, and one honorary member.

The treasury has not been overlooked, and many dollars of unpaid back dues have come to hand during the past months. It is suggested that the members should be more promptly responsive to the appeals of the treasurer.

I now desire to return my sincere thanks for the honor which you conferred on me and which I deeply appreciated; also for the kind and considerate manner in which you have encouraged and aided me in the transaction of duties which, at the best, are arduous and would have been impossible of accomplishment without your cordial co-operation.

The strength of a society lies not in its presiding officer, but in the work of its individual members and of its committees.

It now becomes my pleasant duty to welcome as my successor that worthy son of old Bellevue, too well known to require an introduction to you at my hands, whom you have recently chosen as your president for this coming year. Gentlemen, I present Dr. Charles Clifford Barrows.

Address of the President.—Gentlemen of the Society of Alumni of Bellevue Hospital: I thank you for the honor you have conferred upon me by asking me to become your presiding officer for the next ensuing year. I shall strive fairly and faithfully to carry on the good work which my predecessors in this office have so well inaugurated and so firmly established. Under their wise administration the society has prospered beyond the expectations of even its most devoted friends and members.

We have within a few years grown from a dozen members to more than two hundred, and our meetings are better attended than those of any private medical society of which I have acknowledged.

for five hundred copies in paper. But I leave these questions, and you will easily see that they are very important questions, to the society—to your decision—and I am sure they will be decided wisely and promptly. I thank you again for the honor you have conferred upon me, and assure you that I shall endeavor as best I can to wear gracefully the mantle of my friend which has fallen on my shoulders.

An Unusual Case of Diphtheritic Paralysis.—Dr. FLOYD M. CRANDALL reported such a case. It was of special interest from the fact that the paraplegia had appeared very early in the course of the diphtheria. As a rule, the paralysis of diphtheria showed itself, he said, in two forms—the early and the late forms. The former usually came on during the attack, appearing first as paralysis of the throat. The latter form appeared usually from one to three weeks after recovery from diphtheria. In the case he was about to report complete paraplegia had come on with the diphtheria, and for a time the diagnosis lay between diphtheritic paralysis and anterior poliomyelitis. His experience had led him to believe that diphtheritic paralysis not affecting the throat was more common than had been generally supposed. He had seen a number of cases within the last few years in which the lower extremities had been chiefly involved, and the throat had been but little if at all affected.

Dr. IRVING S. HAYNES said that such a type of paralysis was sometimes observed in orthopaedic cases. He recalled one case in which the paralysis had involved the left lower extremity, and had affected chiefly the muscles of the anterior tibial group. In this case also there had been a doubt for some time as to whether it was a case of anterior poliomyelitis or one of diphtheritic paralysis.

Dr. WILLIAM M. POLK asked with reference to the possible effect of the diphtheritic ptomaines injected in this early form of paralysis. He would like to know if any member had had personal experience in this line of investigation. Of course, these injections so far had been made chiefly upon the effect of the ptomaine injection upon the membranous exudation, but it might be possible, he thought, in connection with any of the manifestations of diphtheria.

An Archaic Japanese Catheter.—Dr. J. W. S. GORRY exhibited a Japanese catheter, two millimetres and a quarter in diameter and thirty-four centimetres and a half in length, made of a very thin band of metal three quarters of a millimetre in breadth, spirally and closely disposed; the spiral beginning at the distance of eight millimetres from the vesical extremity of the instrument, and extending to three centimetres from the distal end, which served as handle, and was in the form of an oriented cone, closed by a movable operculum attached to a styloid by two small contractile bands, thus leaving five centimetres of the vesical end free to move in any direction. In an extent of eight centimetres the vesical end was cylindrical and fixed, and had two small styloid eyes near the point, which was well rounded and smooth.

The instrument, of exquisite workmanship, had been sent to the author by Dr. S. S. I. I. I. of Yokohama, who wrote that he had made it by the method of his grandfather, who had lived in the city of Yokohama for many years, and had been a member of the Dutch medical school.

The instrument was made of a very thin band of metal, two millimetres and a quarter in diameter, and thirty-four centimetres and a half in length, made of a very thin band of metal three quarters of a millimetre in breadth, spirally and closely disposed; the spiral beginning at the distance of eight millimetres from the vesical extremity of the instrument, and extending to three centimetres from the distal end, which served as handle, and was in the form of an oriented cone, closed by a movable operculum attached to a styloid by two small contractile bands, thus leaving five centimetres of the vesical end free to move in any direction. In an extent of eight centimetres the vesical end was cylindrical and fixed, and had two small styloid eyes near the point, which was well rounded and smooth.

of the spiral catheter was Dutch or Japanese, and it could be answered only by a Japanese archaeologist.

The first Dutch spiral catheter had been described by Solingen in his manual of operative surgery, published in 1684. The spiral metallic band was more than twice as broad as that of the Japanese catheter, which resembled the "vermicular catheter" of the Italian surgeon Roncalli-Parolino, who, in his *Historia morborum*, published in 1741, had described the instrument as covered with thin leather, but made of a much narrower metallic band than that of Solingen. The Japanese vermicular catheter seemed to have been intended to be used unsheathed, and was in every respect superior in workmanship to the Dutch and Italian catheters.

Tumor of the Lower Jaw.—Dr. ALEXANDER B. JOHNSON presented such a case with the specimen. The patient, a girl, four years of age, had been first seen on May 4, 1893. The mother had first noticed an enlargement of the lower jaw on the right side eighteen months previously. The swelling of the jaw had been painless, and had grown slowly without causing any difficulty other than visible deformity. The patient had been seen by a physician some months previous to the time when she had been brought to him, and an operation of some sort had been done, probably in the nature of an incision within the month, but the tumor had failed to disappear. Examination of the patient had shown her to be fairly nourished and without any apparent disease other than that in the jaw. The child's face had been oddly deformed, suggesting the undershot appearance of a bulldog. The mental, submental, submaxillary, and parotid regions had been occupied by a smooth rounded swelling which had been covered with healthy integument. The mass had been ovoid in shape and of the volume of a small orange. The enlargement had seemed to include the entire circumference of the body of the jaw, and had projected into the floor of the mouth, displacing the tongue to the right. The tumor had been smooth to the feel and of bony hardness. The teeth had been sound and not loose. Examination within the mouth had shown a prolongation of the growth to the right as far as the first molar tooth. In operating, on May 5, 1893, a horizontal incision had been made from the middle of the chin in front to a point opposite the junction of the body of the jaw with the ascending ramus on the left side. Excision of the bony mass, which had extended as far as the junction of the body with the ascending ramus on the left side and as far as the canine teeth on the right, had been done subperiosteally. The skin and mucous membrane had been sutured, and a small opening had been left in front for drainage. Rectal feeding had been resorted to for the first forty-eight hours. There had been some infection of the wound from the mouth in spite of frequent washing with hydrogen dioxide, and several skin sutures had been removed on the third day. There had been a slight rise of temperature after the operation, lasting for three days. A small piece of the anterior cut surface of the right fragment of the jaw had necrosed and had been removed on June 3d. This necrosis had been accompanied by the formation of a small abscess under the skin, which had opened at the same time, and had healed promptly. There had been a regeneration of bone which had united the two fragments of the jaw remaining after the operation, enabling the child to use the lower molar teeth on the right side satisfactorily for chewing her food. It was evident that the deformity was considerable, but not excessive, when the extensive removal of bone was borne in mind. It seemed probable that a set of properly constructed teeth might be worn with good cosmetic effect with benefit to the child's nutrition and perhaps with a favorable influence on the development of the jaw. At present the projection of the end of the chin, the most forward made a fairly good chin when seen

work on the diseases of the heart and aorta; Uræmia, by Dr. Grainger Stewart; Hydrotherapeutics, by Dr. Herman Weber, of London, whose researches in climatology, hygiene, and kindred subjects are as well known here probably as in Europe; Influenza, by Dr. Pencock, whose beautiful clinical records in the hospital reports are familiar to all who study medicine; and so on throughout the two volumes.

Dr. Roberts's articles on the diseases of the lungs, on lymphatic disease, etc., are most admirable. Sir Richard Quain's own articles on cardiac degenerations, etc., are among the best in the book, being, as so many are, largely the fruit of his own research.

Another illustration of this peculiar merit of the dictionary was presented to the writer recently when, having occasion to look up some points in connection with myxœdema, he found that the section on that subject was written by Dr. Ord.

The fault of the book, and about the only one, is that the articles are of necessity so limited that one misses that full discussion of important data which is sometimes useful and even necessary to a clear comprehension of a subject. But this is, to a great extent, offset by the fact that the authors, as a rule, treat of subjects with which they are so perfectly familiar that they have been able to select the points of real importance. It may be justly said of books of this class that they are to some extent disadvantageous to young physicians, inasmuch as they have a tendency to discourage systematic reading. They are not, however, intended to take the place of text-books and special treatises, but simply as helps for the busy practitioner who may want a quick reference.

It would be highly unjust to allow our admiration of the work in its original form, and of the distinguished authors to whom we are indebted for its production, to obscure our recognition of the merits of the gentleman who has so ably edited the American edition.

The appendix added by Dr. Armstrong is really valuable. He is particularly fortunate in his judgment as to what subjects could be noticed most usefully for the American practitioner.

His articles on medico-legal quarantine and general sanitary topics, though necessarily short, are full of convenient information regarding matters of practical interest to the profession in the United States. The mineral springs of this country also, as well as many climatological data, are treated of as fully as was possible in the available space.

Any one who has occasion to refer to the work should not forget, after having read the article in the main work, to turn to the appendix, where he will find that Dr. Armstrong has furnished him with many additional points that may be of more recent date or of peculiarly American interest.

As we have already said, these volumes are among the most beautiful that we have seen. The publishers have evidently intended that the labors of the distinguished men who have contributed to it should be preserved in that most honorable of all repositories—a handsome book.

Medical Jurisprudence and Forensic Medicine and Toxicology.

By R. A. WOODWARD, A. M., M. D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, and Editor of BECKER'S A. B. LL. B. COMMENTARY ON LAW. With the collaboration of AUGUST BECKER, LL. B., Counsel at Bar, New York; J. W. N. BELLAMY, M. D.; J. C. CLARK, M. D.; D. S. LANE, M. D.; W. B. OGDEN, M. D.; H. H. WINTER, A. P. O.; EDWARD S. WOOD, M. D.; L. C. WOODWARD, M. D.; THE HON. GEORGE M. BROWN; J. C. CAMERON, M. D.; E. D. FISHER, M. D.; C. F. JONES, M. D.; SAMUEL P. ROSS, M. D.; JAMES C.

ROSSE, M. D.; F. P. VANDENBERGH, M. D.; J. H. WOODWARD, M. D., and GEORGE WOOLSEY, M. D. New York: William Wood & Co., 1894. Vol. I, pp. xxix-5 to 845; Vol. II, pp. 751.

PROFESSOR WITTHAUS has written an interesting introduction to this work in which he traces the evolution of medico-legal science in the principal countries of the world, and adopts a very hopeful tone regarding its future in this country. His investigations have shown him that in a hundred and three out of a hundred and twenty-four medical schools from which replies were received to a circular inquiry regarding instruction in this topic, all but three have teachers of medical jurisprudence. In thirty-eight the teacher is a physician, in fifty he is a lawyer, in five he is a graduate in both professions, and three have two teachers, one a lawyer and the other a physician. The average number of lectures is twenty-one, though the average in the schools in which the teacher is a lawyer is fifteen. In sixty-two schools the professor of neurology teaches the medico-legal relations of his subject, in sixty-six the professor of surgery, in sixty-nine the professor of obstetrics, and in ninety-one the professor of chemistry is the teacher of these relations to the subject taught by him. Dr. Witthaus truly says that every practicing physician requires thorough instruction in medical jurisprudence, and it is best taught by one whose profession is the law. The law schools do not seem to attach so much importance to this subject as the medical schools; of thirty-five law schools, only ten have professors of medical jurisprudence.

In these volumes the matter is arranged in three divisions: medical jurisprudence, forensic medicine, and toxicology.

In the first volume, under the heading of medical jurisprudence there are three papers: The Legal Relations of Physicians and Surgeons, by Mr. T. C. Becker; The Law of Evidence concerning Confidential Communications, by Mr. C. A. Boston, and a Synopsis of the Laws Governing the Practice of Medicine, by Mr. W. A. Poste and Mr. C. A. Boston. Mr. Becker's paper reviews the acquirement of the right to practice medicine and surgery, the legal duties and obligations of physicians and surgeons, their right to compensation, their privileges and duties when summoned as witnesses in courts of justice, and their liability for malpractice. Mr. Boston's and Mr. W. A. Poste's and Mr. Boston's papers are comprehensive reviews of the subjects treated therein.

The editor follows Casper's classification in the division of forensic medicine—first, thanatological, in which those branches in which the subject of inquiry is a dead body; second, biathanatological, in which the inquiry concerns both dead bodies and living persons; and, third, biological, in which the inquiry concerns living persons.

The thanatological aspect of forensic medicine, in the first volume, is prefaced by a paper by Mr. T. C. Becker, who, treating of the legal status of the dead body, considers the disposal of a corpse and the obligation to dispose of it, how and by whom it may be examined or removed, by whom necropsies may be ordered, and the rights of relatives and of accused persons.

Mr. A. Becker is the author of the section on the powers and duties of coroners and medical examiners. This section is but a review of existing systems, and the author does not show wherein the many defects of the usual coroner's system demands its abrogation and the substitution of a system of medico-legal examiners.

Dr. H. P. Loomis has written a satisfactory chapter on medico-legal autopsies, and also a suggestive paper on that difficult subject, the medico-legal determination of the time of death.

In a paper on Personal Identity, Dr I. C. Rosse refers to the usual methods used for its determination in the living and the dead. It might be wished that in this topic Dr. Rosse had described judicial anthropometry more at length.

Dr. George Woolsey is the author of an excellent chapter on the medico-legal consideration of punctured and incised wounds and of wounds made by blunt instruments, while Dr. Roswell Park is the author of the chapter on gunshot wounds.

In the chapter on death by heat or cold, Dr. E. V. Stoddard describes explicitly the distinctions he has observed between burns that were ante-mortem and those that were post-mortem.

Dr. W. N. Bullard, in a paper on the Medico-legal Relations of Electricity, considers indirect and direct accidents due to this agent and the symptoms produced thereby.

Dr. D. S. Lamb's paper on the Medico-legal Consideration of Death by Mechanical Suffocation, including Hanging and Strangulation, is one of the most comprehensive that have been written on this topic.

Death from Submersion, by Dr. I. C. Rosse, and Death from Starvation, by Dr. E. V. Stoddard, are the final papers in the first volume.

The second volume contains the chapters on the histological aspects of forensic medicine. Dr. H. S. Wood is the author of the first chapters on the Examination of Blood and Other Stains and on the Examination of Hair. This author, after describing the chemical and optical methods of examining supposed blood stains, refers to the fact that, if blood is detected, it is necessary to make microscopic measurements of the corpuscles in order to speak with definiteness regarding the animal from which the blood came.

Dr. J. Chalmers Cameron, in his paper on Abortion and Infanticide, describes the method of diagnosis of the former condition, discusses the results of the treatment of the latter, and, incidentally, briefly refers to the means of deciding whether the induction of abortion was justifiable, and then considers the features of criminal abortion *in extenso*. His chapter on infanticide is also complete.

Mr. F. C. Bossett and Dr. John Harwood are the authors of the final chapter of this section of the volume, on the Determination of Succession, in which they consider the importance of import in determining the devolution and distribution of property.

The biological section of forensic medicine has as its first paper Mr. F. C. Bumpus' paper on the question of when a medical examination or other inspection of the living human body as performed or prepared by means of force. Dr. C. G. Fisher is the author of a manuscript paper on Pyromania, Furies, and the Insane and Sane.

On 1 Oct 2000, the following parameters were used: $\alpha = 0.05$ and $\beta = 0.01$.

The paper on *Yams* by Dr. J. Griffin Edger and Mr. J. C. Johnson, also 1913, is comprehensive and contains contributions to the literature of this subject.

The T. C. Ponce is the method of the degree by Poncelet's Curve. Shows that changing the speed of travel of the

For W. B. Eerdmans in the morning of the August 19th the President and Mrs. W. B. Eerdmans of Eerdmans, Michigan, a party of 1000, arrived at the station, leaving the train for the city of Chicago. We do not agree with the number that is usually mentioned, because the President and the President's wife were not present at the time of the arrival of the President's train in Chicago. The President and the President's wife were not present at the time of the arrival of the President's train in Chicago. The President and the President's wife were not present at the time of the arrival of the President's train in Chicago.

are extremely frequent after railway accidents and injuries, while in accidents under other circumstances they are extremely rare. While the author, whose title-state he is chief surgeon to a railway system, may see more traumatic neuroses due to railway injuries than to other causes, we believe that in a large neurological clinic he will find that traumatic neuroses follow all forms of accident with fairly regular frequency. A personal acquaintance with St. Louis neurologists suffices to inform the reviewer that the strictures on these specialists that occur on page 625 are baseless, and we know that no eastern neurologist of repute feeds "the mind of the patient with suggestions to the intensification of the neurotic state."

The final chapter in the second volume is on Simulated Diseases, by Dr. W. Thornton Parker.

We judge that the editor made a *lapsus penne* in the statement that the applications of the microscope to forensic medicine would be treated of in the second volume; presumably the third volume will refer to this branch, and the fourth volume to toxicology.

In the main, the papers are satisfactory and the volumes are likely to prove valuable additions to the literature of forensic medicine and medical jurisprudence.

ference to Students of Medicine. By JOSEPH H. RAYMOND, A. M., M. D., Professor of Physiology and Hygiene in the Long Island College Hospital, etc. With One Hundred and Two Illustrations in Text and Four Full-page Colored Plates. Philadelphia: W. B. Saunders, 1894. Pp. 7 to 382. [Price, \$1.25.] [Saunders's New Aid Series.]

THE author states as the reason for the existence of this work that twenty years' experience as a teacher of physiology has forced him to the conclusion that in the short time allotted to the study of physiology in medical schools students can assimilate only the main facts and principles of this science, "which lies at the very foundation of a sound knowledge of the healing art"; hence the utility of a manual. We fully agree that a sound knowledge of physiology is indispensable to any knowledge of medical science, but we do not agree that an investigation of "the more recondite and abstruse parts of the subject" is a necessary part of the preparation of the physician's life.

If the amount of material is so great that no sufficient time for a cursory survey of so important a subject, then that survey must be postponed until sufficient time for a thorough study of it.

We strongly recommend a book like this that would become the textbook for every child in the United States. It would bring young people rather than advance it to the standard of our four years' worth of reading history, and we expect we will have a more complete knowledge of our country by so presenting a glimpse of our past. We are the nation's youth.

[illegible]

Medical Journal, June 17, 1893, p. 680, were referred to the great improvement in the second edition over its predecessor, and the present volume is worthy of the commendation we then expressed.

Leçons des cadavres. Application de l'entomologie à la médecine légale. Par MIGNON, membre de l'Académie de médecine. Paris: G. Masson, 1894. [*Encyclopédie scientifique des aide-mémoire.*]

IN this interesting volume the author formulates a law according to which the insects that infest corpses arrive there successively—by squads, so to speak, come these workmen of Death—and in a constant order. He considers that a knowledge of this law will lead to a sufficiently exact determination of the time of death, provided it has occurred within three years. Each squad works for a certain time, during a certain number of months, that vary according to the species, before it is replaced by the squad that invariably succeeds it; and from this it is possible to deduce, given the time in question and the number of squads that have succeeded each other, the probable date of death.

The volume is a valuable addition to forensic medicine.

BOOKS, ETC., RECEIVED.

A Monograph on Diseases of the Breast. Their Pathology and Treatment, with Special Reference to Cancer. By W. Roger Williams, F.R.C.S.; late Surgeon, Western General Dispensary, and Surgical Registrar, Middlesex Hospital. With Seventy-six Figures. London: John Bale & Sons, 1894. Pp. vii-572. [Price, 21s.]

The Disorders of Speech. By John Wyllie, M.D., F.R.C.P. Ed., Physician to the Royal Infirmary, Edinburgh, etc. Edinburgh: Oliver & Boyd, 1894. Pp. viii-495.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P. Edin., F.R.S. Edin.; Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume III. Part I. Edinburgh: T. & A. Constable, 1894. Pp. 48.

Transactions of the Medical Association of Georgia, Fortieth Annual Session, 1894.

Twenty-seventh Biennial Report of the Trustees, Superintendent, and Treasurer of the Illinois Institution for the Education of the Deaf and Dumb, Jacksonville, June 30, 1894.

Arsberättelse (No. 10) från Akademiska Sjukhuset Upsala för det förflutna Åren af Professor Dr. S. E. Henschen, Verkst. Direktor Överläkare a medicinska Afdelningen.

Requisita medicæ. Infectio Quædam. Requisitiones. The Medical Society. Stockholm, 1894.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Practical Surgery. Instruction in Anatomy to the Fourth Annual Lecture Course in the Army College of Postgraduate Studies. London: M.D.

Plastic Operations and also Mechanical Appliances for Covering Disfigurements. By Frank L. R. Tetamore, M.D. [Reprinted from the *New England Medical Journal*.]

Total Extirpation of the Uterus by a New Method. By Albert H. Tuttle, M.D. [Reprinted from the *Boston Medical and Surgical Journal*.]

A Series of Interesting Cases in the Service of Dr. Horace Tracy Hanks at the Woman's Hospital. By John H. Kishmiller, M.D. [Reprinted from the *American Gynecological and Obstetrical Journal*.]

Ueber die Wirkung des Tolysals. Von Dr. Bothe. [Sonderabdruck aus der *Allgemeinen medicinischen Central-Zeitung*.]

Miscellany.

Hot Springs and the Medical Profession.—The following remarks were made by the Hon. William H. Martin at the opening session of the recent meeting of the Mississippi Valley Medical Association:

Mr. President, Ladies, and Gentlemen: Prompted by the strength and independence of perfect physical health, we may at times be prone to disparage the science of medicine, as well as its chosen disciples, but when stricken down by any of the thousand ills that flesh is heir to, how readily we recant that heresy, and invoke the services of the nearest doctor!

Practitioners of medicine are manifestly God's chosen people. On the page of success they receive full credit, not only for the cures effected by their own skill, but also of such cases as in the ordinary course of nature would recover in any event. And if by any chance he should err in the diagnosis and disastrous results ensue, the doctor's mistake is buried far from the sight of human eyes. How differently fares your cousin, the lawyer! The victims of his mistake or ignorance either live to denounce him where all the world may hear, or, if the result chances to be serious, his error is suspended in mid air, where all the world may see and as a fearful admonition to the gazing multitude either to live better or else to employ better counsel.

A literary member of your profession whose life was a beneficence and blessing to all the world for more than four-score years and who, rich in honors and the love of his countrymen, has recently been called to the reward awaiting the good beyond the portals of the grave, expressed his belief that, saving one or two remedies, if all the materia medica was sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the fishes. If I may be allowed to dissent from such eminent authority and indulge a personal opinion, I would say commend me to the doctor who in the confidence born of knowledge and experience adopts the heroic treatment. And still, I have sometimes doubted whether in this opinion I am not moved by the same impulse that directed the sufferer from toothache. He engaged the services of a dentist, who by means of the modern appliances succeeded in extracting the offending member, viz., tooth or molar. When the patient came to settle his bill, and found it was a dollar, he paid it, but, believing it had been earned too easily, he accompanied the dentist with a protest to the effect that only last week he had carried that same tooth to his neighbor, the blacksmith, that the shoer of horses had caught it with a pair of nippers, and dragged him all over the shop and out into the horse-lot, and for the expense of one had out of fifteen cents.

But even if we should subscribe to the doctrine of Dr. Holmes, we may truthfully add with him that, if every specific

were to utterly fail, if the cinchona trees all died out and coal-tar were unknown, if the arsenic mines were exhausted and the sulphur regions all burned up, if every thing from the animal, vegetable, and mineral kingdoms were to disappear from the market, a body of enlightened men organized into a distinct profession would be required just as much as now, and respected and trusted as now, whose province would be to guard against the causes of disease, to eliminate them if possible where still present, to order all the conditions of the patient so as to favor the efforts of the system to right itself, and to give those predictions of the course of disease which only experience can warrant and which in so many cases relieve the exaggerated fears of sufferers and their friends or warn them in season of impending danger.

Nature is the great friend and ally of your craft. Recognition of this is given voice in the holiday attire Hot Springs has donned in honor of your coming. We believe it is to the best interest of the world at large, as well as the medical profession and our city, for a closer relation to be established between us. Disclaiming any intention to detract from the professional skill or scientific knowledge of you gentlemen, we are firmly persuaded that the Great Physician, the divine source of all wisdom, has caused a boiling water to flow from our mountain-side and charged it with curative properties that render it effectual in cases where the profession must sometimes despair.

Believing this, Mr. President, it affords us the greatest pleasure to entertain the flower of the medical profession, that you may make personal investigation and bear witness to what you see, and determine for yourselves whether or not in your future practice you may not sometimes serve your patient best by advising a visit to our Valley of Vapors.

But it lies beyond the scope of my mission to-day to elaborate upon the properties of our water. Indeed, Mr. President, I have been forewarned that in addressing a convention of doctors upon the subject of "water," I can not expect to arouse any considerable degree of enthusiasm. Nor is it my purpose to make you acquainted with the devious and peculiar ways of that original Hot Springs product, the "drummer." The local members of your craft will dissect him at a clinic to be held during the week, and they can impart vast stores of information and anecdote to you. But as you are here to consult the "drumming doctor."

I am rejoicing in My Father's visit to Hot Springs, and the welcome that I voice will come in company with social treatment during his stay. Just what necessary there may be in attending a hospital that is not a part of the disease, I do not think so. The place I have in mind is not a mere hospital, but a social place, and in all places, whether his visit be professional or social, it is by the social treatment that the best of results will be obtained. In the best of confidence and confidence you will find that the social treatment of the sick and of love, when more than one life lies trembling in the hands of fate, is a more certain one and a more effective one, that we all look for comfort, and whose expression will be the most effective.

Or if it be when life's fitful fever is over, and the sands of time have run their course, he gladly goes to France, and his office is at once to administer relief to the dying and comfort to the bereaved.

The Mitchell District Medical Society - The Society's next business meeting will be held on Monday, January 16, 1916, and will elect the president of Dr. J. H. ...

Eastman, of Indianapolis. The programme includes the following papers:

The Right Pulmonary Apex, by Dr. Theodore Potter, of Indianapolis, Ind.; A Report of Additional Operations for Extra-uterine Pregnancy, by Dr. Rufus B. Hall, of Cincinnati; Concretions of the Tonsils and their Influence in producing Sore Throats, by Dr. Lewis C. Cline, of Indianapolis; The Tonsil as a Site of Infection, by Dr. J. A. Thompson, of Cincinnati; Mistaken Notions about Glasses, by Dr. F. C. Heath, of Indianapolis; Hysterical Joint Affections, by Dr. P. S. Conner, of Cincinnati; Squint, by Dr. Dudley S. Reynolds, of Louisville, Ky.; A Review of Urethral Surgery, by Dr. R. Harvey Reed, of Columbus, Ohio; The Ideal Operation for Varicocele, by Dr. G. Frank Lydston, of Chicago; Public and Private Hospital Work, by Dr. A. M. Owen, of Evansville, Ind.; The Cause and Prevention of Pelvic Inflammation in Women, by Dr. L. S. McMurtry, of Louisville; Some Suggestions in Rectal Practice, by Dr. J. M. Mathews, of Louisville; Cancer of the Rectum, by Dr. Archibald Dixon, of Henderson, Ky.; The Medical Fad of the Nineteenth Century, by Dr. Samuel H. Collins, of Lawrenceburg, Ind.; A Case of Obscure Fracture Complicating Dislocation of the Elbow Joint—Arthrotomy, by Dr. Hugo O. Pantzer, of Indianapolis; Some Cases of Abdominal Section followed by Slow Heart, by Dr. T. A. Reamy, of Cincinnati. Papers will be read by Dr. J. C. Culbertson, of Cincinnati. Dr. J. W. Marsee, of Indianapolis, and Dr. I. N. Love, of St. Louis. A lecture entitled What are we here for will be delivered by Dr. J. M. Mathews, of Louisville.

The Use of Hypodermics of Alcoholic Stimulants for the Resuscitation of Stillborn Infants.—The November number of *The Medical Record* contains an article by Dr. William Brown, of Alexandria, Va., in which he remarks that he, in common with others of the profession, has not infrequently found it difficult and too often impossible to resuscitate stillborn infants. During the past three or four years, he says, in several cases of this kind, apparently under the most hopeless circumstances, when all other standard methods had failed, he has resorted to hypodermics of brandy or whisky with the most satisfactory results. Except in some rare cases, where life has ceased some time before birth, he feels satisfied that this remedy could be used to the exclusion of all others with positive reliance.

A hypodermic of five or six drops of the stimulant is administered in each arm, and the circulation and the entire nervous system respond promptly to its action. In the case of the still-born infant, cold, limp, and apparently lifeless, without cardiac action or pulse, and entire absence of respiration, the first act of the infant under the effect of the stimulant is to widely expand the eyelids. Then, in place of the dark, livid line of the

Original Communications.

THE DIAGNOSIS AND TREATMENT OF
TUBAL PREGNANCY.

WITH REFERENCE TO THE ...

By IRVING S. HAYNES, Ph.D., M.D.

ADJUNCT PROFESSOR OF ENTOMOLOGY AND COMMUNITARIAN BIO-ENTOMOLOGY
MEDICAL DEPARTMENT OF THE UNIVERSITY OF ILLINOIS, CHICAGO
ASSOCIATE CHAIRMAN, NEW YORK UNIVERSITY (1980-1981)
MEMBER OF THE SOCIETY OF AMERICAN ENTOMOLOGISTS
OF THE AMERICAN MEDICAL ASSOCIATION

EXTRA-UTERINE gestation occurs about once in twelve hundred cases of pregnancy. One writer states one to twelve thousand; another, one to three hundred and thirteen. It is a somewhat rare condition, and one of very serious import to the patient. If undiscovered until rupture has taken place, it is usually fatal, either from the hæmorrhage or from the septic conditions induced by it. If it is discovered previous to rupture, its removal is usually not very difficult and the attending dangers are slight.

In this paper I shall confine myself to the tubal variety of extra-uterine foetation.

The opinion of modern writers seems to be that all forms of extra-uterine impregnation, excepting ovarian, take place in the tubes; that later about forty per cent. of the ova are extruded from the tube, either into the abdomen or uterus, while sixty per cent. remain and develop as tubal pregnancies.

In the tubal variety early rupture is the rule, followed usually by the death of the patient. However, if the diagnosis of this condition can be determined previous to rupture, and an operation performed for the removal of the tube and its contents, the termination is usually successful. The whole interest, then, centers about the phenomena by which we are to make the diagnosis.

As a rule, the symptoms of tubal pregnancy are the same as those of normal pregnancy up to the time that pain and irregular hemorrhage occur. Briefly recapitulated they are as follows: Morning sickness of the kinds usually described; mammary changes, consisting of an increase in the size of the gland, tingling or other irritable sensations; enlargement of the areola; stoppage of the monthly flow.

At this point appears the important symptom of pain. The pain is sudden, colicky, and felt in the iliac region of the side where the sac is situated. The pain is soon followed by a bloody streak, frequently indurated and sometimes

If an examination is now made, the uterus will be found somewhat enlarged but to a less degree than in normal pregnancy. The cervix is unsoftened and the os slightly opened. The uterus may be rounded backward or be made by a forward bend in position. This uterus is more or round, freely movable (if no adhesions have formed), empty, tense, and insensitive.

Before considering the diagnosis I will rehearse the history of the case.

Mrs. F., aged twenty-eight years; married in July, 1893.

[illegible]

There was a severe hemorrhage from March 25 to March 31, 1915, and the patient was treated by the method hereafter described. This was followed by the discharge of considerable blood in which were fragments of placenta and membranes. The hemorrhage continued for three weeks. Was regular in April and May. In June she had no menstruation. Since June 1, 1915, she has had but four periods, and they are not normal.

July 23d. The pain was felt in the lower part of the abdomen, passed down the thigh, inner side of the leg, and into the foot, on account of the hemorrhage. The flow continued three days, and then gradually subsided. In just a week (July 23d) the attack returned in exactly the same way. First, severe pain in the external genitals, followed by the hemorrhagic discharge. She came to my office on the evening of the 23d and gave the above history. I suspected extra-uterine pregnancy, and made an examination with that in mind. The uterus was enlarged to the size and shape of a large pear, about three or three and a half inches long and correspondingly increased in girth. It had settled well down into the pelvis, but was freely movable in all directions without pain. No enlargement of the tubes could be felt, though special effort was made for this purpose. There was a thick discharge on the finger, looking and smelling like menstrual blood. *

December, 1914. He wrote that she was pregnant, and was inclined to think that I had one of those patients that lose blood once or twice at the beginning of their pregnancy.

I gave some 12 mg of 100 mg tablets of the lake water. The patient, who had suffered from a heart attack, was hospitalized on the day after the bleeding had ceased. From this time until the 17th of August I was on my vacation. On the 17th she came and said that the hemorrhage had not returned until the 1st of August, three days after the second attack. That it began again as before, was preceded by severe pain in the same region as before. The pain lasted longer than with the first two attacks. The hemorrhage continued three days and then stopped. She used the ergotin pills during this time. It is worth the same symptoms were repeated with the exception that the pain and general blood weakness continued until the 10th of August (19th).

LDH and MAO concentrations at 19.8 °C in this case tended to be one of about one-half that of the control (i.e. go down) and in the morning I usually observe something in parallel with the pattern. If this morning's presentation goes well, I'll try again, then.

The Dorothea settlement (1846). When the pastoral was formally transferred to the Dorothea settlement, I wrote a careful explanation. This was when it was obvious the Dorothea men had no way to buy themselves. The Dorothea women, in contrast, had money. They put some into the bank, and the money had been used to buy some land. I was surprised to find that the Dorothea men had no way to buy themselves. The Dorothea women, in contrast, had money. They put some into the bank, and the money had been used to buy some land. I was surprised to find that the Dorothea men had no way to buy themselves.

Concerning the expulsion of the decidua or its removal by the curette, Smith lays this force upon it, that in proper hands the curette will clinch the diagnosis. Hughes says the presence of the decidua is a symptom of great importance. Lusk states that the expulsion of the decidua, although a valuable sign, is not a constant occurrence.

From these quotations we see that there are no pathognomonic symptoms for the diagnosis of tubal pregnancy.

The symptoms as they occur are, first, the morning sickness or other neurotic disturbances common to normal and abnormal pregnancies alike. Then there are the mammary changes that are alike in both cases, consisting of enlargement, sensitiveness, secretion of milk, widening of the areola. The monthly period is missed. The woman thinks herself pregnant. In from two to three or four weeks after the monthly period is passed she is suddenly seized with an attack simulating colic. The pain is usually felt in the pelvic region, in either of the iliac fossæ, or, as in my case, in the external genitals.

The pain gets easier with the onset of a bloody discharge. The hæmorrhage lasts from two to four days, recurring at weekly periods or oftener. Later it may become continuous. If an examination is made about the second

amination, though I did not find it so, and I was examining especially for extra-uterine pregnancy. Later there will be no difficulty in making out an oval, elastic tumor with a smooth surface at the side and closely joined to the uterus. The tumor may be sensitive to pressure. Blood will be found upon the examining finger that looks and smells like menstrual blood.



1. Report on the accuracy of the following data: 2. Formulate the hypothesis, state a test statistic, a confidence interval, and a p-value for the test.



© 1995 by The American Society of Human Genetics. All rights reserved. Reproduction of this article is permitted in any format without written permission from the publisher.

months you will find that the earth soft and the vegetation sparse. The water will be increased in size. You may find the tide colored as you may see. In the light of the sun, all seas. I should think it good practice to get other and make a score. Having a collection of these fish to give with out it. The tide runs have been ordered in my first

At this later examination the uterus may be smaller in size than it was at the first one. In my case this difference in size was especially noticeable. At the first examination, finding no tumor about the uterus, I had no hesitancy in telling the woman she was pregnant. In the second the diminished size of the uterus was manifest at once. It was of about the normal size, and the cervix was hard and the os firmly contracted. The changed condition in the uterus was due primarily to the situation of the developing ovum, and secondarily to the uterus she had passed. At this point the question arises, Would it not be wiser for Lagnier to give up the case a few days in order to see if it is supported by a normal pregnancy, the uterus and return to its normal size? It is difficult to see how it could be that the ovum lies without the uterus. At this second examination the enlarged part was easily felt, the wall still flattened in this connection with the uterine diameter, straight, and in freedom from abnormal contract. To be sure, the patient has under the influence of ether, but the supposition is strengthened that the condition of her uterus is satisfactory when the possibility of an abnormal ovum and placental condition has been eliminated. It is impossible to be very certain then. What line of demonstration of belief is necessary is possible. By an experiment of this nature the question is positively settled, and at least that is to be preferred to an uncertain, doubtful or unsatisfactory waiting of several days, since the danger of exposure to an abortifacient is always a fundamental cause in the fallacy.

Diagnosis.—Close methods of procedure have been followed. The fact, by the location and the use of strongly

hypodermic needle of solutions of morphine, atropine, or strychnine. The dangers attending this seemingly simple operation are so great that it is performed no longer. There are seventeen cases recorded of operation by this method, with eleven deaths (references 17 and 18). The death rate is sufficient to condemn the operation.

Second, the treatment by electricity. This is a method chiefly used in this country; no foreign writers advise it, except the Russians (references 17 and 18). Some writers here are so enthusiastic over the use of electricity that they advise it exclusively. However, its use is not without danger. Three deaths and four serious accidents are recorded against it (18). The action of the current may cause rupture of the tube, an occurrence not to be desired. Moreover, if the result is pronounced satisfactory at the time, a mass is left behind that may not entirely disappear: it is a true foreign body that may become encysted



and partially absorbed, yet which nevertheless increases in size until the patient, because it may become the seat of a fatal amount of inflammatory growth, dies, and produces fatal infection.

The third method is the removal of the tube and its contents by abdominal section.

Fourth, the use of the electric current, pregnancy being induced by the current, and the tube and its contents removed by the use of the current.

The only method of treatment by which the tube and its contents are removed is by the use of the current.

previous to rupture is from the hæmorrhage that follows an unintentional rupture of the sac. But this can easily be guarded against and arrested if it happens.

There are no special directions for the operation. The strict rules of modern aseptic operations are to be followed. Suture the abdominal layers separately, closing the wound tightly, without a drain.

If the intestines have been handled much, or there have been numerous adhesions to break up, I should think that Dr. Wiggan's (19) plan of flooding the abdominal cavity with a hot normal saline solution would be of great benefit.

As we are not dealing with ruptured tubes I will not refer to the difficulties met with in those cases.

The patient I had was operated upon after the above-described plan.

The history was uneventful and recovery perfect. The recovery was delayed slightly by the gaping of the wound and its healing by granulation and cicatrization.

The specimen was oval, with a smooth surface, and of the size of a hen's egg. On section it shows a central cavity—the amniotic cavity—surrounded by a layer composed of organized blood-clot or chorionic growth.

There was no distinctly formed fetus. The specimen is an exact reproduction of one illustrated in the *International Medical Annual* for 1893, page 445, Fig. 58.

The ovary shows the corpus luteum of pregnancy.

References.

1. William T. Lusk. *N. Y. Journal of G. and Obs.*, No. 2, vol. vii, 1891, p. 78.
2. J. F. W. Ross, of Toronto. *Am. Journal of Obs.*, No. 1, 1893.
3. Vertinski. *Lancet*, 1892, p. 16.
4. Austin Laurence. *Trans. of the Obs. Soc. of London*, 1892-'93, p. 439.
5. A. H. N. Lewers. *Lancet*, March 10, 1894.
6. J. F. Smith. *N. Y. Journal of G. and Obs.*, 1893-'94, p. 160.
7. W. S. Playfair. *London Obs. Trans.*, vol. xxxv, 1892.
8. Same in *System of Midwifery*.
9. J. Bland Sutton. *London Obs. Trans.*, vol. xxxiv, 1892.
10. C. J. Cullingworth. *London Obs. Trans.*, vol. xxxiv, 1892.
11. W. T. Helmuth. *N. Am. Journal of Homœ.*, 1894, p. 379.
12. D. Hughes. In the *Trans. of the Internat. Congress of Obs. and Gyn.*, 1891, p. 644.
13. Smolsky. Quoted by Hughes.
14. C. H. Hunter. In a paper read before the Minnesota Academy of Medicine, February 1, 1893.
15. Henry Bangs. *Transactions of the Chicago Gynecological Society*, published in the *Am. Journal of Obs.*, 1893, p. 135.
16. Pozzi. *Medical and Surgical Gynecology*, vol. ii.
17. *International Medical Annual*, 1893, p. 447.
18. Quoted by Pozzi.
19. F. H. Wiggan. *Rev. Rev. J.*, August 11, 1894, p. 168.

Chinese Dentistry. The *Times and Register* says: "The Chinese dentist makes artificial teeth from the horn of an ox, and inserts them by passing a copper wire through them and hammering it into the socket teeth."

and medulla; some minute hemorrhages upon posterior border of tegulae cerebri, and upon the medulla.

CASE XXIX. Symptoms.—Temporary unconsciousness, no other primary general symptoms; temperature on admission, 98.4°; second day, 101.6°; afterward, 99°. On the tenth day, restlessness and slight delirium; eleventh day, slight chill and increased delirium, which became permanent, but of less active character; fourteenth day, post-cervical rigidity; and on the fifteenth, slight general convulsion; mental condition sluggish; pupils remained normal; respiration, 18 to 22; pulse, 104 to 112. Temperature on the evening of the tenth day rose to 101° and on the eleventh day to 104.6°; it varied from that point to 103° till the fifteenth day, when it rose progressively and reached 107.4° on the sixteenth day, and death ensued.

Lesions.—Compound fracture with slight depression above right supra-orbital ridge, confined to external table; subarachnoid purulent effusion over both frontal lobes, encroaching upon parietal and extending into median fissure.

CASE XXX. Symptoms.—Transverse wound of right side of the head.

Left facial paralysis on second day; hernia cerebri on the third day; mental condition deteriorated and paralysis increased. Patient transferred to Bellevue on the thirtieth day; then suffering from hysteria and melancholia which had preceded the infliction of the injury; restlessness; loss of control of urine and feces; left hemiplegia; slight dilatation of pupils; articulation difficult; sensation normal; pain in right supra-orbital region and at seat of the wound; mental processes slow. Temperature, 100°; pulse, 120 to 140; respiration, 20. At site of injury there was an infected granulating wound through which a probe could be passed into the brain. Four days later, under ether, an attempt was made to locate the ball, and a cavity was found to exist, extending nearly transversely inward two inches and a half, with moderately firm and well-defined wall, and having a small bit of bone at the bottom. The ball was not discovered. Temperature from admission had risen to 102.6° at time of exploration. Death occurred two days later; temperature then 107.4°.

Lesions.—Gunshot fracture of right temporal bone in squamous portion; osseous wound had been enlarged by trephination; slight hemorrhage over right occipital lobe and a few threads of yellow exudate in same region and on the right side of the median fissure; ball passed through lower face area, nearly transversely inward to a point beneath the median surface and just above the callosal-marginal fissure; was then deflected backward at a right angle by the resistance of the falx cerebri, and was lodged an inch behind the cavity recognized at the time of exploration. General hyperemia.

CASE XXXI. Symptoms.—Transverse wound of left side of the head. Unconsciousness, which continued till death, five hours later; slight dilatation of left pupil. Temperature one hour after reception of injury 98.2°; two hours afterward, 97.6°;

CASE CII. Symptoms.—Unconsciousness, which continued till death at the end of three hours; general muscular rigidity. Temperature, 101°; pulse, 98; respiration, 20.

Lesions.—Penetrating wound and fracture of left temporal bone, above the ear, three eighths of an inch in diameter, from a blow inflicted with a revolving screw-driver. The instrument passed through both hemispheres, wounding the dura upon the opposite side, and involving the posterior part of the left corpus striatum and both optic thalami; a thin cortical hemorrhage covered both hemispheres and the superior surface of the cerebellum.

CASE CIII. Symptoms.—Patient, nine days previous to admission, came home with head bleeding, vertigo, nausea, and feeling of weakness, from an injury of unknown origin, and was said to have been afterward treated for pneumonia. On admission, he was found to have compound depressed fracture of right parietal bone, and the wound was foul and suppurating; mental condition stupid; left hemiplegia and right facial paralysis; deviation of tongue to the left; opposite radial pulsations symmetrical; slight dilatation of left pupil; coma supervened an hour later, and convulsive movements of the right face four hours and a half after admission. After elevation of the depressed bone, and escape of a small amount of pus from below the dura, the pupils became normal, and there was a single clonic convulsion of the left side. Death occurred thirteen hours and a half from time of admission. Temperature for twelve hours was 106°+, and afterward 107.2°; one hour post mortem, 107.4°. Pulse, 118, 170, 158; respiration, 44 to 60.

Lesions.—Compound depressed fracture of right parietal bone, just behind coronal suture, and half an inch from median line; purulent subarachnoid effusion over convex surface of right hemisphere, which anteriorly extended to the base; superficial laceration of right parietal lobe beneath the site of fracture, which was prolonged subcortically, both anteriorly and posteriorly, but did not reach the motor area; pus from this laceration had escaped in small quantity into the arachnoid cavity; left hemisphere markedly hyperemic and moderately oedematous.

CASE CIV. Symptoms.—Consciousness primarily retained; thirty minutes later general convulsions followed by complete unconsciousness and an apparently moribund condition. Elevation of a depressed portion of the left parietal bone restored consciousness and some strength to the circulation. Convulsions recurred next day, and death ensued in twenty-three hours. Temperature, 102.4 to 104.1°; pulse, 108 to 160; respiration, 22 to 60.

Lesions.—Fracture confined to the vertex; epidural hemorrhage of small extent, and laceration of inferior surface of right frontal and temporo-sphenoidal lobes. (Infant, aged twenty-two months.)

ENCEPHALIC INJURIES WITHOUT FRACTURE.

CASE CV. Symptoms.—Violent delirium for two days; recurred on the sixth day, followed by unconsciousness and hyperaesthesia. Temperature, 103° to 104°; afterward, 100° to 103°; final temperature, 103°. Death in twelve days.

Lesions.—Pial hemorrhage over left occipital lobe, extending into median fissure; subarachnoid serous effusion.

CASE CVI. Symptoms.—None recovered till fourth day, when there were four unilateral convulsions. A single one occurred on the fifth day, and they then continued with increasing frequency till death on the eighth day. Each one began by a twitching of the facial muscles, with head and eyes turned to the right, and extended to the rest of the arm, and finally to the left hand. Temperature on admission 100°; twelve hours later,

103°; then 103° to 104°, till sixteen hours before death, when it rose to 105°.

Lesions.—Extensive laceration of right hemisphere; cortical lobe, with cortical hemorrhage over whole right hemisphere.

CASE XVII. Symptoms.—Meningitis, with meningitis, on admission ten hours after reception of the injury: extreme muscular tremor, followed in two hours by a general convulsion; from this time periods of general convulsions, with intervals of unconsciousness or delirium, lasting about six hours, alternated with periods of quiescence of equal length; no initial symptom. Death in two days.

Lesions.—Deep laceration of right frontal lobe, anteriorly and externally, extending into parietal region; cortical hemorrhage, covering right frontal lobe, right parietal lobe anterior to the Rolandic fissure, and the temporo-sphenoidal lobe, both laterally and inferiorly.

CASE XVIII. Symptoms.—No external evidence of injury; position, leaning against a fence.

Lesions.—Lacerations and contusions covering greater part of right frontal and temporo-sphenoidal lobes; cortical hemorrhage over the whole left hemisphere.

CASE XIX. Symptoms.—Coma; stertor; contraction of pupils; full pulse; rapid respiration. Temperature, 101°+. On the third day coma more profound; dysphagia; continued irritability and restlessness. Temperature, 104.5°. Death in four days; temperature, 107.4°.

Lesions.—Small laceration at left parieto-occipital junction; cortical hemorrhage over posterior part of left parietal lobe; general hyperemia.

CASE XX. Symptoms.—Coma, restlessness, and general hyperesthesia; temperature, 103.4°; pneumonia discovered on the second day. Death on the third day.

Lesions.—General hyperemia, with some punctate extravasations; organized membranous effusion, studded with calcareous nodules, over left hemisphere.

CASE XXI. Symptoms.—Sudden coma; stertor; double facial paralysis; complete right hemiplegia and hemianesthesia; temperature, 99° to 103°. Trephination and drainage of serous effusion from the base by position of the head was followed within six hours by return of consciousness, normal temperature, power of articulation, and the use of temperature to heat, and this improvement in condition continued fourteen hours; slight clonus, preceded by a prostratoric movement, temperature to 101°, and death occurred the fourth day.

Lesions.—Integrity of both cerebral lobes. Hemorrhagic hyperplastic clot, which extended into both lateral ventricles; consequent shift of brain substance to the right; rupture of the right cerebellum and cortical hemorrhage, which spread over the pons into the transverse fissure.

CASE XXII. Symptoms.—No primary general convulsion; temperature, 100°. Second day, general convulsion and loss of consciousness. After the convulsion, rigidity, and falling strength; mind clear. Eighth day, general muscular rigidity, and convulsion; temperature, 101°. Ninth day, general convulsion, and loss of consciousness. Temperature, 101°. Tenth day, 101° to 102°. Death on the tenth day.

Lesions.—General hyperemia, with some punctate extravasations; organized membranous effusion, studded with calcareous nodules, over left hemisphere. Death on the tenth day.

CASE XXIII. Symptoms.—No external evidence of injury; position, leaning against a fence. Death on the third day.

it did not prevent rational reply to questions; temperature rose to 103.2° on the fifth day, and afterward fell very gradually to 100°; on the fourteenth day it was 103.4°; and on the fifteenth, five hours ante mortem, it was 103.8°, and one hour post mortem 104.2°.

Lesions.—Cortical hemorrhage over both hemispheres and in largest quantity over parieto-occipital junctions; some subarachnoid serous effusion in left frontal region; general hyperemia with punctate hemorrhages, most marked on the left side.

CASE XXIV. Symptoms.—No external evidence of injury; position, leaning against a fence. Death on the fourth day.

Lesions.—Moderate subarachnoid serous effusion over anterior two thirds of right hemisphere; laceration of left temporo-sphenoidal lobe, excavating and destroying its whole structure; cortical hemorrhage extending around the circle of Willis and upward upon the occipital lobe, and in patches upon the frontal and parietal lobes.

CASE XXV. Symptoms.—No external evidence of injury; coma; stertor; rigidity of right side; pulse, 120; temperature, 100°. Death on third day; temperature, 103.2°.

Lesions.—Large subarachnoid serous effusion; recent clot in substance of left cerebellum. An old laceration existed upon antero-superior surface of left occipital lobe and another upon its inferior surface.

CASE XXVI. Symptoms.—Consciousness lost and partially restored before admission, twenty-four hours later; mental condition rational, but comprehension slow; slight dilatation of left pupil. Temperature, 99°, followed by some left paresis and by some dysphagia referred to the left side of the throat. The patient from the time of injury often fell out of bed, always on the right side. Subsequently transient facial paralysis occurred; amount of paresis and of dilatation of left pupil varied from day to day; mental condition deteriorated. Temperature for ten days was 99°+; later, 100° to 101°; pulse and respiration nearly normal. Trephination on the fifteenth day discovered a small subcortical cavity in the right leg area containing less than a drachm of yellowish fluid, afterward found to contain leucocytes. The temperature was 99°+ till death on the sixteenth day.

Lesions.—Integrity of both cerebral lobes. Hemorrhagic hyperplastic clot, which extended into both lateral ventricles; consequent shift of brain substance to the right; rupture of the right cerebellum and cortical hemorrhage, which spread over the pons into the transverse fissure.

CASE XXVII. Symptoms.—No external evidence of injury; position, leaning against a fence. Death on the third day.

Lesions.—General hyperemia, with some punctate extravasations; organized membranous effusion, studded with calcareous nodules, over left hemisphere. Death on the third day.

CASE XXVIII. Symptoms.—No external evidence of injury; position, leaning against a fence. Death on the third day.

left fronto- and parietal region; three convulsions within first six hours, the last followed by partial paralysis of left lower face. The temperature on the first day was 101.8° , 102.8° , 100° , second to sixth days inclusive, 100.6° to 102° ; varying to normal; normal; and then for ten days abnormal, during the greater part of each twenty-four hours. On the thirteenth day a severe chill was followed by temporary rise of temperature to 101° ; and on the nineteenth day a slight chill by an elevation of temperature, which progressively increased till death, on the twenty-first day. Until the occurrence of the second chill there were few general symptoms; some remaining paresis and anesthesia of the right face, more or less mental aberration, and some delusions. After the second chill strength diminished, the mental condition became sluggish, the respiration rapid, and temperature rose to 105.5° .

Lesions.—Subcortical laceration and excavation of left prefrontal lobe, with a penetration backward to a point opposite to the middle of the corpus striatum; no hemorrhages; large subarachnoid serous effusion and opacity of the arachnoid over the whole vertex; general hyperemia and oedema.

CASE CXIX. Symptoms.—Consciousness retained; wound in right parietal region; condition alcoholic; heavy sleep during the first night after admission; afterward constant restlessness; some pain in the back of the head; vomiting of everything taken into the stomach; temperature on admission, 102.6° ; second day, 105° ; and at time of death, which occurred somewhat suddenly at the end of the third day, 103.8° ; pulse moderately accelerated, varying from 120 to 88; pupils and respiration normal.

Lesions.—Subarachnoid purulent effusion over both frontal lobes, mainly on the left side, with some general oedema of the pia; scanty fibrinous exudation at the base; and fibrinous patches on inner surface of the dura at the convexity.

CASE CXX. Symptoms.—Absolute unconsciousness till death, an hour and a half after reception of the injury; small wound behind the right ear; dilatation and immobility of both pupils; respiration on admission, 42; an hour later, 21; ceased at death rather suddenly; no cyanosis; pulse feeble and soon became imperceptible; temperature on admission, 98.9° ; an hour later, 98.2° .

Lesions.—Pituitary, caused by contrecoup, force having been transmitted through the feet and lower extremities; fractures of both inner and outer tables of both sides and right astragali; fracture of left foot and contusion of soles of both feet; pial hemorrhage to extent of several ounces of fluid blood, mainly at the vertex and in larger part on the left side, extending into median fissure, and which had broken through into the arachnoid cavity; also in considerable quantity upon the inferior surface of the cerebellum, about the median line, and covering the pons; no lacerations; excessive general hyperemia, most strongly marked on the left side and in the pons, optic thalami,

teeth day there was somnolence and increase in temperature and infrequency of the pulse and respiration; stupor deepened, and on the seventeenth day unconsciousness was complete. Death occurred in eighteen days. Temperature on admission, 99.4° ; fourth day, 99° ; till the end of second week, 99° to 100° ; and on the seventeenth day, 102.7° to 103.8° ; on the eighteenth day, 105.4° . Pulse on admission, 96; normal till fifteenth day; later, 160. Respiration on admission, 26.

Lesions.—Hematoma over right parietal eminence; thrombus in superior longitudinal sinus; great fullness of meningeal veins over the vertex; convolutions flattened; frontal lobes relatively small, parietal lobes bulging as though from distention; general cerebral hyperemia and oedema without punctate extravasations and with few minute thrombi; substance of cerebellum nearly normal. By compressing posterior portion of the cerebrum and making vertical sections anteriorly, serous fluid exuded in great quantity; little serum in the ventricles. A clot about the size of a large pea and of elliptical form occupied the exact center of the anterior third of the left optic thalamus. There were no lacerations, hemorrhages, or subarachnoid effusions, and upon microscopical examination no inflammatory changes.

CASE CXXII. Symptoms.—Walking case; unconsciousness supervened some hours after injury, and continued till death on the third day; wounds in occipital and both parietal regions; slight dilatation of left pupil. Temperature, 103.6° to 106.6° .

Lesions.—Large pial hemorrhage compressing left fronto-parietal region; excessive general hyperemia with numerous minute thromboses; subcortical laceration just external to anterior part of left corpus striatum, an inch by half an inch in its diameters.

CASE CXXIII. Symptoms.—None recognized till admission three days after reception of the injury; partial loss of consciousness; complete right hemiplegia and hemianesthesia including trunk; complete aphonia; slight dilatation of pupils; bilateral convulsive movements of face and neck with the eyes turned to the right, repeated every five minutes; respiration shallow and hurried; pulse rapid, feeble, and irregular. Temperature, 101° to 104° ; radial pulsation fuller and stronger on the left side than on the right. Trephination disclosed arachnoid clot. Death occurred before operation was completed.

Lesions.—Pial hemorrhage with clot covering both frontal and both parietal lobes; right lateral ventricle filled with hemorrhagic serous effusion; general hyperemia.

CASE CXXIV. Symptoms.—Walking case; unconsciousness supervened some hours after apparently trivial injury; no discoverable external lesion; dilatation of pupils; second day, partial restoration of consciousness; fourth day, delusions; ninth day, stupor; eleventh day, complete unconsciousness. Death at end of twelfth day. Temperature on the first day, 102.4° ; afterward, 101° to 99° ; final observation, 100.8° ; pulse, 76, gradually increasing in frequency; respiration, 24, 20, 28.

Lesions.—Thin layer of pial hemorrhage which covered the opposing surfaces of the superior median fissure, and spread over left occipital and parietal lobes to margin of the temporal lobe, some blood also pial in the left middle fossa, general hyperemia and moderate oedema.

CASE CXXV. Symptoms.—Unconsciousness which soon after admission was replaced by delirium; no external injury; no other nervous control, becoming constant of a quiet sort by day and violent by night in the seventh day, when for some hours before death it was muttering, or typhoid, in character; severe condition resulted from the treatment; patient was at no time able to give any account or to respond to a question, except a few very appropriate utterances. Death supervened on the seventh day. Temperature on admission,

INTERESTING CASES FROM GENERAL PRACTICE ILLUSTRATING SPECIAL POINTS OF TREATMENT.*

By CHARLES E. LOCKWOOD, M. D.,

ATTENDING PHYSICIAN, DEPARTMENT OF DISEASES OF THE NERVES,
OUTDOOR DEPARTMENT, BELLEVUE HOSPITAL.

IN this age of realism, when the profession are seeking to refer diseases to special causes, and the revelations of the microscope are disclosing to us a vast unseen world of vegetable and animal parasitic organisms, which, by their number and association, are making it more and more difficult to assign to any specific one its rôle of causation, and when chemistry is constantly pointing out new ptomaines and leucomaines whose action in the production of physical derangement and disease is undetermined, while atmospheric and climatic variations, hereditary influences, and individual peculiarities and environment are being investigated, it does not seem amiss that we should carefully study and report the cases which come under our observation as general practitioners, noting carefully such facts in the family and individual history as seem most important in the light of the increased knowledge of this century, in the hope that we may be able to each add our humble mite to the fund of knowledge which shall in the future make this world less full of trouble to man who is born of a woman and whose days are few. Although parasites, ptomaines, leucomaines, and defective chemical action have been shown to be responsible for a large number of diseases and affections to which the human family is liable, it still remains to study the individual factor which may be more or less modified by premature or senile instability and decay, functional insufficiency and derangement of particular organs, defective chemical action, and lack of vital force in the great nerve centers, and to point out that certain affections of the alimentary canal, which were formerly supposed to be caused by the gouty diathesis, are now known to be the result of the formation of ptomaines, due to fermentation caused by slow digestion incident on defective secretion from lowered nerve tone, and which are now cured by the administration of intestinal antiferments, together with such measures as restore nerve tone.

My first group of cases includes five which are especially of interest to the neurologist: One of tumor of the medulla oblongata, one of migraine, one of male hysteria, one of simple neurasthenia, and two of reflex neurasthenia, in which the peripheral irritation was supplied in one case by the eyes and in the other by the genital organs.

The second group includes three: One of gonorrhœal cystitis; one of gonorrhœal proctitis, endometritis, salpingitis, and oophoritis; and a case of obesity with probably fatty heart, compensated by dilatation and mitral insufficiency, complicated with bronchial catarrh and pulmonary edema, and illustrating the effects of methodical looking toward the unloading of the peripheral circulation of the kidneys and intestines, together with a cardiac tonic in relieving an overtaxed weak heart.

the time I saw them, leaving each case to speak for itself and carry its own lesson.

Hysteria in the Male.—A. B., aged thirty-one years; born in Scotland; occupation, a journalist; of neurotic temperament.

Family History.—Grandfather on father's side died of consumption at sixty-three years of age. Grandmother on father's side died of catarrh of the stomach at forty-five years of age. Father living, sixty-two years old; was born when father was fifty-three and mother forty-five years old. Has chronic bronchitis, emphysema, and tuberculosis, bacilli having been found on two examinations during the past year, and commencing cataracts in both eyes; of neurotic temperament, and has undoubtedly a gouty diathesis, having been troubled with eczema and oxalate of lime having been frequently found in his urine. Has been subject to attacks of asthma since twenty-one years of age; had specific trouble when twenty years of age, followed by secondary and tertiary symptoms. In 1880 and 1881 was worried about family matters and had nervous attacks, accompanied with loss of consciousness, from which he was revived with difficulty. Says the attacks were not epileptic. One uncle died when young. One uncle, now living, is perfectly well, and another uncle, sixty-two years old, was said to have had consumption when young, but went to Australia and recovered.

I was asked to see this patient, as he had a nervous impediment in his speech, rendering his mode of conversation quite different from the usual form (probably hysterical stuttering). His father wrote me as follows: "From what he tells me the attacks must be epileptic, and the doctors who have seen him seem to have come to my conclusion, that they are caused by some intestinal irritation. As in his present condition he is unfit to be out of doors, I told him I would ask you to call and see him at his house."

I accordingly visited the patient, and obtained the following history: At five years of age the patient had typhoid fever; at seven, scarlet fever; he suffered much from pain in the back until twelve years of age; he was in good health, except that he had dyspepsia. During the preceding summer he was very well. He rode the bicycle to excess; at times he rode until he fell off the wheel exhausted; he also climbed cliffs. On October 2, 1891, he walked two miles, feeling unusually well; went to his office, had feelings of apprehension and heart pain, took a seat in a chair, and then, he says, all was blank. The next thing he remembers was that he was holding on to a doorpost and looking into the adjoining office. He was led to a chair by the typewriter. His head was clear, but he was unable to speak. He wrote in the dust on his desk the word "doctor." He was laid on the floor, and all movement in the left leg and arm was lost. On the following day he recovered motion in the arm, but the left leg dragged on walking for two weeks. His left leg was very weak afterward, and he seemed to be obliged to make a great exertion to move the leg. He says he has had several such attacks, and that each attack has been followed by spasmodic asthma. In January, 1892, he over-exerted himself, became elated, and threw his hat in the air, when he fell down and was unconscious for half an hour. In November, 1892, he had slight attacks, characterized by a feeling of apprehension, and a sensation as though his heart was quivering from side to side like jelly. After these attacks his stomach was distended with gas, and he passed about two quarts of gray colored urine. At times, when sitting, he gets stiff, his head falls back, his mouth opens and remains rigidly open, as though he locked, he is unable to speak, and has a fixed stare. He had two or three such attacks in one day, and then no more for four days. He says he gets over an attack more quickly when he moves about and goes into the open air. He has had

tone and the successful treatment by nux vomica, iron, rest, and nutrition.

2. The idiosyncrasy in this case, allowing of the digestion of oatmeal gruel prepared with milk and followed by a peptonizing powder, when milk and limewater, kumyss, and peptonized milk were rejected.

Tumor of the Melulla Oblongata (probably Glioma).—M. M., female, white, married, aged twenty-five years. Family history: Father living and in good health, sixty-one years of age; has followed the sea for thirty years. Mother died at forty-two years of age from enlargement of the liver. Four brothers and two sisters living and well.

Present History.—Has been married seven years; has had four children; no miscarriages. First child was born eleven months after marriage, second child nineteen months after the first, third child eighteen months after the second, fourth child seventeen months after the third. No history of syphilis in parents, husband, or self. Has never been ill before, except with diseases incident to childhood. Two of her children died in September, 1893, from diphtheria and measles, in consequence of which she suffered much from mental depression. In November, 1893, she began to suffer from pains in the back of the neck, and at the same time had heavy spells of coughing and sneezing, which have continued up to this date. Has had nystagmus in both eyes, which has now ceased. She also noticed difficulty in swallowing and fluttering of the eyes. About four weeks ago she began to feel a weakness in the knees, as though she was about to double up. She was unable to stand for any length of time or maintain her balance while standing with the eyes shut. She also has tachycardia, the heart pulsations numbering 140. She walks with a staggering gait and is constantly in fear of falling. She is not dizzy, but weak; dislikes to raise her hands to her head, prefers to let them hang down by her side; has creeping feeling under arms and on the sides of the body, and sore feeling in the ends of her fingers when she touches anything.

March 16, 1894.—Dr. Frederick Peterson saw the patient and thought she had a tumor of the vermis of the cerebellum pressing on the medulla and affecting the glosso-pharyngeal, pneumogastric, and other nerves.

April 10th.—Dr. M. Allen Starr was of the opinion that this patient had a tumor of the medulla, causing all her symptoms. He treated the case by the pharynx and larynx, with choked discs and commencing anaesthesia. Suggested that the patient remain quietly at home, use morphia hypodermically, and give her a grain of strychnine, three times a day, and a grain of a grain, as a heart tonic.

May 22d.—Patient's condition unchanged. The points of interest in this case are the diagnostic value of such symptoms as pain in the back of the neck, nystagmus, coughing, sneezing, and vomiting, as indicating irritation of the glossopharyngeal and vagus nerves, and the value of the following symptoms as indicating irritation of the sympathetic, pneumogastric, and other nerves, and pointing to the medulla as the organ affected.

Personal History.—Patient states that she menstruates regularly once a month, but generally suffers from headache before or after; that she has suffered from headaches for the past ten years; that she now has them twice a week, and that they came on originally after sweeping, with the windows open, on a wet day. She thinks she suffers more from them in the winter than in the summer. Eyes and nose ache and run water when she has a headache, and she also suffers from nausea. Precursory symptoms are coldness, dryness, and itching sensation of the nose. She has had one child, now twenty-three years of age; no miscarriages, and has never been seriously ill. Examination of the uterus shows tenderness back of the cervix and that the womb is bound down by old adhesions the result of peri-uterine inflammation. Examination of the urine shows nothing abnormal except a deposit of triple phosphates.

Treatment was begun January 6, 1892, by the administration of Herring's extract of cannabis indica, a sixth of a grain three times a day, before meals, with directions to increase the dose weekly by a sixth of a grain until three sixths were taken, or some unfavorable symptoms were produced by its action, such as light-headedness, drowsiness, or a dreamy state, and a fiftieth of a grain of arsenious acid after meals. Her eyes were examined by an oculist, and some defects found, for which proper glasses were prescribed. The above-mentioned measures constituted the interparoxysmal treatment, and during the attacks and in the endeavor to ward them off antipyrine and caffeine were used, but unsuccessfully for the most part, it being necessary to use a hypodermic of morphine to control the attacks, which seemed to me to be justified in this case, as long as the attacks were not very frequent and no tendency to the morphine habit was developed. A hypodermic injection of crystallized hyoseyamine, a fiftieth of a grain, has been advised to control the attacks, but this I have not used. Under the treatment the patient improved so that on February 6, 1892, a month after commencement of treatment, the interval between the attacks had been prolonged to two weeks. On March 7, 1892, the interval between the attacks of headache had been lengthened to three weeks, and from this time on, for the next two years, the attacks were so infrequent that I was not consulted. On March 19, 1894, however, the patient called and said she was again suffering from the headaches, which came on weekly. Extract of cannabis indica was again prescribed, with a fiftieth of a grain of arsenious acid, three times a day; three five-grain Bland pills after meals and twenty grains of sodium bromide at 4 p. m. and at bedtime. On May 16, 1894, the patient had had no return of the headache for four weeks. She is now taking two pills of a sixth of a grain of extract of cannabis indica three times a day, which she has been advised to continue for many months, and a fiftieth of a grain of arsenious acid, with iron, the bromide having been discontinued.

The points of interest are :

1. The difficulty of ascertaining the exact cause of the attacks of migraine, which might furnish clear indications for the treatment.
2. The value of the palliative treatment by means of cannabis indica, morphia, iron, and bromides.
3. The importance of the consideration of uric acid as a factor in the causation of migraine, as suggested by the investigation and results brought forward by Dr. Alexander Haig, of London, who on a diet of milk, fresh fruit, and vegetables diminished the frequency of headaches in his own person from an average of one in a week to an interval of eighteen months.

ous system, due probably to strong hereditary tendency, strumous and gouty dyscrasia, and the evil effects, in such cases, following close application of the mental faculties and indoor confinement.

2. The ocular defects, probably due to malnutrition, and the reaction of such defects upon the oversensitive nerve centers, as shown in this case by a great variety of morbid sensations, probably due to instability of the vasomotor system of nerves.

3. The relief of the unpleasant nervous symptoms in this case by the wearing of proper glasses, without cutting the eye muscles, and thus avoiding another source of nervous irritation which I think the frequent operation sometimes does produce.

Gonorrhoeal Ophthalmitis: Treatment by Washing out the Bladder with Solutions of Boric Acid and Borax in Glycerin and Warm Water, and the Administration of Diuretics, Antiseptics, Diluents, and Tonics, followed by Cure.—C. A., colored, aged thirty-four years; born in Nashville, Tenn.

Family History.—Father died of phthisis at about forty years of age, and two brothers suffer from lung trouble.

Personal History.—Has had gonorrhoea two or three times, it having lasted in one instance for three years; has had stricture of the urethra, for which internal urethrotomy was performed. Had primary syphilis in 1880, and has had outbreaks of such symptoms up to the present time, for which he has been treated intermittently; had intermittent fever at ten years of age, pneumonia in 1876, and pleurisy in 1879. Patient has been under my care since 1888 up to the present, during which period he has received considerable treatment on different occasions for rheumatism, syphilis, pleurisy, and minor ailments. On December 23, 1893, he called on me and said that he wished to be examined to ascertain if he was suffering from stricture of the urethra, as he had had some discharge from the urethra and had been using various injections without favorable result. Thinking he might be suffering from discharge due to congestion of a damaged urethra behind a stricture, and he giving no history of gonorrhoea, I passed a No. 15 bulbous bougie into the bladder and met with no obstruction. My patient seemed satisfied and left my office. On December 28th, however, he called again, and now complained of great frequency in passing water, accompanied with tenesmus and pain. I advised that he should go to bed, apply hot poultices over the hypogastrium, take thirty grains of citrate of potassium, well diluted with water, three times a day, and, to allay the vesical irritability, use a suppository of one grain of extract of hyoscyamus and one third of a grain of aqueous extract of opium three times a day. An examination of his urine showed a large amount of pus and blood.

December 29th, 1893. The same treatment continued, with rest in bed, but the distressing symptoms not having abated, and the urine being still loaded with mucus and pus, on January 1, 2, 3, and 4, 1894, I washed out his bladder with a solution of boric acid in warm water, a teaspoonful to the pint, by means of a rubber catheter, with a rubber tube attached connecting with a flexible No. 7 rubber catheter, not more than one inch in length, inserted into the bladder at each application.

On January 5th, 1894, I took a bougie of not more than two feet above the fundus of the bladder.

On January 11th, 1894, the patient presented a suppurative gonorrhoea, but still has frequent attacks of pain, which, with the frequent washing, seemed to pass. Patient was treated with a solution of boric acid in warm water, and an ointment of eucalypti, after getting better. I passed a catheter to ascer-

tain whether there was any residual urine, and found none. A rectal examination showed the prostate to be swollen and tender. I then washed out the bladder with a solution of borax in warm water, two teaspoonfuls to four ounces, and ordered him to take an ounce of infusion of buchu with five grains of benzoate of sodium three times a day as a diuretic and antifermentative; to drink freely a tea made of green parsley as a diluent, and ten drops of the muriated tincture of iron three times a day as a tonic. This treatment was continued, washing out the bladder twice a week with the last-mentioned solution, to which a little glycerin was added, until January 27th, when the symptoms yielded, urine clearing up, and the patient recovered completely.

The points of interest in this case are:

1. The probability of this patient having contracted a gonorrhoea which he had aggravated by irritant injections when he first consulted me, and the importance of bearing such fact in mind on being consulted in such cases before passing instruments into the bladder which might carry infection, patient having misled me when he called by asking to be examined for stricture.

2. The importance of examining the discharge in such a case as to the presence of the gonococcus.

3. The curative effect of washing the bladder not too frequently with borax and warm water, twice or three times a week seeming to be sufficient, so as to avoid too much mechanical irritation, combined with the diuretic and antifermentative effects of buchu and benzoate of sodium, the diluent qualities of parsley tea, and the tonic properties of the muriated tincture of iron.

4. In another case I should try the effects of the internal administration of methylene blue in capsules, beginning with a dose of half a grain three times a day, as an antiferment, and increasing if necessary to eight grains.

Gonorrhoeal Proctitis, Endometritis, Salpingitis, and Oophoritis.—L. K., white, aged twenty-four years, consulted me January 8, 1892, complaining of uneasy feelings and pain and discharge of mucus from the rectum. I was led to suspect the existence of gonorrhoea, from the fact that her husband was at this time under my treatment suffering from gonorrhoea, who stated that he had recently returned from a railroad trip, and while away had intercourse with a suspicious party, and that on his return home, after seeing his wife, he had noticed a discharge. However, the patient made no complaint of ardor urine, and a careful examination at this time failed to show any discharge from the urethra, vagina, or cervix uteri. An examination of the anus showed it to be inflamed and fissured, and wishing to avoid unpleasant family complications, I endeavored to make light of the matter and touched the fissures with a solid stick of nitrate of silver, which seemed to give some relief. As the examinations were very painful and disagreeable to the patient she did not call on me again until January 28th, when she still complained of discharge of mucus from the rectum, for which I now prescribed rectal injections of borax and warm water and suppositories of tannin, five grains each. Another careful examination showed no discharge from the urethra, vagina, or cervix uteri. I heard nothing further from the patient until February 14, 1892 (seventeen days after her visit to my office and thirty-seven days from the date of the commencement of her illness), when I was asked to see her and found her still discharging mucus from the rectum. I also now found the cervix uteri red, inflamed, and eroded, and a large plug of yellow mucus hanging from the external os. There was great

tenderness on pressure in the posterior abdominal wall of the vagina, and examination by the rectum revealed a small movable body about the size of an English walnut posterior to the cervix uteri, a swollen and prolapsed ovary, and to the left, and somewhat posterior to the body of the womb, a movable mass which felt like a collection of pus and by which the body of the uterus had been pushed over toward the right. A diagnosis was now made of gonorrhoeal endometritis, salpingitis, and ovaritis, and rest in bed advised, with application every other day of tampons of cotton to the cervix uteri saturated with a mixture of ichthyol and glycerin, two drachms to four ounces, iron, and abundance of nourishing food. Tampons were used every other day until March 4th, when the menses came on and the vagina was cleansed every other day with warm carbolated injections. On March 12th, the period having ceased, the tampons were resumed, and continued at longer intervals until April 16th, when, there being no discharge evident from cervix, urethra, vagina, or rectum, patient was discharged, apparently cured, and up to date of this writing there has been no further complaint.

The points of interest in this case are:

1. The gonorrhoea of the rectum which attracted attention when there were no symptoms of gonorrhoeal inflammation of the urethra, vagina, or cervix uteri apparent.

2. The supervention of endometritis, salpingitis, and ovaritis about a month after the appearance of the rectal discharge.

3. The efficiency of ichthyol and glycerin tampons in curing the disease without recourse to operative measures.

4. The necessity of looking beyond the vagina for evidences of gonorrhoea, as, according to Bumm, it is rare for the disease to begin in the vagina, usually showing first in cervix uteri or urethra.

Obesity with probably fatty heart accompanied by distention and marked dyspnoea, completely cured by repeated courses of Peptomangan (E. R.) and fatty soups (from the land); weight, two hundred pounds. Begun to grow stout at twenty-four years of age, and has been increasing in flesh since. Family history good.

I saw her first on November 11, 1893, when she had been ill for ten days and confined to her bed, and found her sitting up in a chair and greatly troubled with fits of coughing, wheezing, and dyspnoea, so that she feared the worst, anæmia, and complaint of great increase in the weight which probably was due to the violent fits of coughing. Her face drew an anxious expression. Pulse 120 to the minute, and respiration showed marked and constant distress throughout. The area of dulness in the cardiac region was found somewhat beyond the normal, but I was unable at this time to make any measurement. It probably being assumed by the Misses de Munn. A diagnosis was made of hæmorrhagic anæmia and pulmonary anæmia, and the case was referred over to the Misses de Munn, which seemed to give some relief. On the next day, however, the patient seemed to grow worse, and I started to call and reported to her the symptoms more distinctly found in the case of the patient. Dr. H. C. M. P. was the same day, and on this occasion, confirmed the diagnosis and advised the administration of a full course of Peptomangan, iron, and nourishing food, every second hour, and said that he would see her on the following day, and that he would be able to make a more complete examination, and a reliable amount of labour or domestic work, but with the result that on November 15th the fits and wheezing had disappeared, and the patient was discharged. Under suitable after-treatment for the anæmia and a heart from the

patient ultimately fully recovered her health. I should add that a careful examination of her urine was made and nothing abnormal found.

The point of interest in this case was the relief afforded an overtaken weak heart by cathartics and diuretics, unloading the peripheral circulation of the intestines and kidneys, combined with a heart tonic.

THE USE OF PEPTOMANGAN FOR ANEMIA IN PULMONARY TUBERCULOSIS.

BY KARL VON RUCK, B. S., M. D.

CHIEF OF THE HOSPITAL ATTACHED TO THE
DEPARTMENT OF THE INTERIOR AND AGRICULTURE.

The anæmia of tuberculosis differs from some other forms in being, as a rule, the result of the deleterious effects of toxins upon the blood, or upon the blood-making organs.

Simple anæmia at times precedes the development of tuberculosis, and becomes a predisposing factor to infection with the specific germs, and in the course of the disease such anæmic states may also result from gastro-intestinal complications. These do not come within the limits of this paper. While the toxic form can not always be distinguished because frequently associated with the other, toxins must be recognized, nevertheless, as a chief cause of anæmia in all contagious and infectious diseases. In its treatment the indication is to create the prevention of the production of toxins within the body, which can only be accomplished by the removal of the pathogenic germs, or by the production of immunity from their toxins.

The destruction of the specific germs of tuberculosis within the living organisms, or immunity from their toxic products, occur naturally in strong and healthy persons who show no predisposition to the acquirement of tuberculosis. If infection occurs in such, their tissues, and especially the blood, are capable of offering successful resistance, and the organism is preserved in its integrity.

In the established disease, the resisting power of the particular patient has evidently been insufficient, either by reason of the organism being overpowered by the excessive quantity of infective material, or by reason of the weaker resistance on the part of the tissues when the specific germs gained entrance. This view is so uniformly accepted, and in the light of pathological investigation as well as of clinical experience, it is so well proved, that there is no necessity for me to dwell upon it further, and as no illustration is required in this paper.

Naturally the direct treatment of the disease with specific germs, or the removal of the germs from the blood, has been attempted, but with little or no success. Through the introduction of the remedy in Peptomangan (E. R.) and by the expenditure of labour or domestic work, we must, nevertheless, not lose sight of the healing power of the patient and of his recovery, as far as that may be possible. It must be remembered, if we expect to cure

and filled with bacteria, the circulatory system becomes septic, and miliary abscesses in the kidneys and liver, as well as abscesses in the spleen, lungs, and various parts of the body, are produced. Again, these softened purulent thrombi disintegrate, the resulting emboli producing infarctions in the lungs, spleen, etc. Ulcerative endocarditis occurs in a few cases, and may be associated with cerebro-spinal meningitis. The body may be jaundiced, and in two cases seen by the writer parotitis occurred. Retinal hemorrhages (Litten) may occur. Emboli may lodge in the eye, producing suppurative and destruction of the organ (panophthalmitis). Inflammation and suppuration occur in one or more joints. I have seen myositis purulenta.

The blood in both septicæmia and pyæmia presents a slight leucocytosis. Streptococci may be seen, but are not so constant and easily demonstrable as in the different viscera, especially the kidneys (glomeruli). The important question naturally arises, What relation do they bear to the disease? Rod shaped bacteria are also seen, but the constancy and varied distribution of the round micro-organisms leave no doubt that they play an important part in the whole pathological process. These round micro-organisms present themselves as micrococci, diplococci, streptococci—i. e., according as they are arranged singly, doubly, or in a row. It must be remembered, however, that these round germs are not peculiar to a given disease, as they may frequently be seen in the throat in diphtheria. I have seen them in the colon in dysentery and in mercurial poisoning, in non-puerperal cystitis—in short, in many conditions. And while indirectly these micro-organisms produce many pathological effects, I do not believe that they directly cause puerperal fever. I have seen these germs in so many conditions that it appears to me that all they require is a favorable nidus to aggregate and "live" upon. It is common for the round germs to form chains (streptococci) while they live. Because we find two (diplococcus) of these organisms united is no reason why we are dealing with a specific diplococcus or streptococcus. The rod-shaped bacteria during life also have this tendency to unite in rows. It is regarded by some bacteriologists as characteristic of the anthrax bacillus. In urine which has been left standing for two or three days I have so frequently seen this row arrangement of different varieties of rod shaped bacilli that I have regarded this property as the natural tendency during life of most bacteria, rather than a characteristic of a given bacillus (anthrax bacillus). There can be no question that certain micro-organisms will only grow and develop where they find a favorable soil. In puerperal fever this nidus is usually developed in a solution of nutrient tissue as part of the general tract. Bacteria, however, as well as bacilli, are aware that certain favorable spots exist in the tissue, and come there to develop and multiply. By placing cow dung under a board I could attract a particular species of bug. The farmer (I had observed that some of the board in a wood of field) would not a particular bug (taken among German meadows) in 7 days. I have observed that when the soil is moist it is difficult to get the bug, but with this soil in the dry state the bug comes in numbers from the soil. And so in these bodies the dead tissue

Let the bacteriologists answer. Where they came from, no man knows. They may aid in the process of putrefaction, and herein lies the danger of the organisms in puerperal fever. In healthy tissue they remain inert; in diseased tissue their pathogenic character becomes manifest. The effects of bacteria are influenced by the media in which they rest (Klein, Waterhouse, Lachowicz).

158 RUSH STREET.

CLINICAL NOTES ON THE USE OF NUCLEIN SOLUTION.

By CHARLES R. MATTSON, M. D.,
PHILADELPHIA.

THE following clinical notes are brought to the attention of the profession, because of the marked benefit attending the use of the nuclein solution in cases which have proved rebellious to other methods of treatment, and for the further reason that this product is now attracting such a large share of attention on the part of clinicians:

Nervous Prostration.—Mrs. —, aged forty-six years, for the past fifteen years has suffered more or less continuously from disordered stomach digestion and gastro-intestinal catarrh; in fact, there was a general catarrhal condition of all mucous structures. A year ago last spring she had an acute attack of indigestion, from which she recovered in a greatly emaciated condition. The general appearance at that time was about as follows: Marked anæmia, with a flabby condition of all the muscular structures, rheumatic pains in the joints, the hands and feet swollen, the tongue large and heavily coated, with most pronounced insomnia. The urine contained neither albumin nor sugar, but there were present some triple phosphates and a considerable percentage of urates (uric acid?). Insomnia was, perhaps, the most obstinate symptom, and the patient would read until two or three o'clock in the morning without the least disposition to sleep. The treatment employed up to that period had consisted in the administration of the salicylates and other approved remedies calculated to ameliorate the suffering, but without avail, further than the relief of the acute symptoms.

During the month of June of the present year my attention was first directed to the therapeutic virtues of the nucleins through the publications of Dr. John Aulsebrook, of Philadelphia, and I determined to give this new product a trial. At this time the general condition of the patient manifested all the symptoms peculiar to malnutrition, such as we observe in lithæmia, neurasthenia, etc. The bowels were obstinately constipated, so that no action occurred without a purgative. The skin was sallow and the nails were brittle. The menopause had made its appearance about a year previously, and the molimen was irregular. About the middle of July last this patient went to the mountainous regions of Pennsylvania for the summer, with the following instructions in regard to medicines: She was to take two tablets of the nuclein solution, each containing approximately a third of a minim, every three hours, and one tablet of strychnine arsenite three times a day, and this treatment alone was faithfully carried out until her return, about the first of September, when she had apparently fully recovered from all the preceding symptoms, which had existed for the preceding seven years. The appetite had increased wonderfully, sleep was restored in every respect, constipation had been overcome, and there had been absolutely no difficulty with the digestive apparatus, since she had begun to take the medicine. Another

thing which was especially noticeable was the disappearance of the rheumatic pains and the swelling of the joints and feet, and the skin had a remarkably fresh and clear appearance for one of her age. Particular attention should be called to the improvement in the condition of the finger-nails: formerly brittle and with the lines characteristic of the rheumatic diathesis upon them, they are now in a normal condition and possess the peculiar resiliency which is noted in perfect health. The patient has gained twenty pounds in weight, and says she is better than for ten years past. There has also been a most gratifying change in the mental condition; the irritable temper has given place to smiles and pleasant greetings, and there are a buoyancy and mental exhilaration that can not pass among her friends unnoticed. This lady now takes an active interest in everything going on about the house, instead of lying in bed suffering from *malaise*; she has no trouble in securing rest, and rises in the morning refreshed and vigorous.

Pulmonary Tuberculosis.—Mr. —, aged forty years, has been suffering from pulmonary hemorrhage for the past five or six years. This hemorrhage I assume to be due to the gradual inroads of the disease, as there is no evidence of active congestion. The patient spits up blood, not only in the morning, but during the day. During the early autumn he was so poorly that he could not be around, and was confined to bed for several weeks; but on a consultation it was decided to send him to Asheville, N. C., and he returned four weeks later, having gained eighteen pounds. After the patient's return from the South he was far from well, and about the 20th of September, 1894, there was profuse expectoration mornings, which consisted of a muco-purulent substance containing tubercle. At that time the nuclein tablets were advised, two tablets (approximately two thirds of a minim) every three hours, and within a week the expectoration was almost entirely relieved. There was no soreness in the chest, the appetite was better, and there had been no bleeding since the last time he was here. The use of the remedy was continued, and at this writing the patient says he feels stronger, both physically and mentally, than for a long time. I quote from him as follows: "Being so much more of these tablets here, I feel that they are doing me a great deal of good. Really, I have no pains, and feel very well." This is a very interesting case, and I shall watch it with more than usual care, reporting the results of further treatment.

1519 N. LINCOLN STREET

THE INFLUENCE OF
NASAL OCCLUSION OVER CEREBRATION

BY DAVID L. LINDLEY AND M. D.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
 10100 MONTGOMERY AVENUE, BETHESDA, MARYLAND 20815
 TELEPHONE: (301) 975-3000
 FAX: (301) 975-2850

Simon Geertz, of Amsterdam, first *described* and then demonstrated the anti-influence, especially "in children," of confusion of cause and effect, causality, correlation, and named it *omnium in omnibus confirmatory causae*. It has been posted in several works devoted to ideology, and I doubt if the theory of the instrument and *omnibus* instantly listed symptoms produced in this condition are appreciated or understood by the general practitioners, since the authors with certain cerebral symptoms mentioned in the same below list may be relegated to a class of incurable mental cases and make out a miserable existence. Spontaneous

reference is made by Guye to the influence of this condition in children, but in my experience, in private and dispensary practice, the full and baneful influence of this intranasal abnormality is more pronounced in adults than in children.

The following cases may not be uninteresting to the readers of your journal:

CASE I.—R. A., white, aged forty-three years, by occupation a farmer. Has been slightly deaf for several years, lately increasing very rapidly. Has noticed slight obstruction to breathing for two or three years, which, becoming rapidly worse, totally prevents nasal breathing, and for a year or more has had to breathe through the mouth. For several months he has had a "feeling of pressure, heaviness, and constriction, as if a band were being tightened around his head." His memory has been failing for several months, and is gradually becoming worse; he remembers with difficulty on one day the occurrences of the day preceding; there is an inability of thought concentration and of word forgetfulness, simulating amnesic aphasia. He complains that the remarks of his friends on his appearance annoy him and have become intolerable. His appearance is decidedly idiotic, and owing to his deafness his answers are convincing to his non-professional friends of his mental condition. Prior to the beginning of his affection his mind was perfect, and he was, as he yet is, an industrious worker.

On examination, I found nothing indicative of cerebral disease; no parasthesie, muscular power being normal in every respect. Examination of nose: Left nostril almost completely occluded by a deviation of the cartilaginous and anterior portion of bony septum. On attempting nasal respiration through this nostril the air falls inward like a valve, shutting completely the small breathing space he has. The right nostril contained a large and dense hypertrophy of lower turbinate tissue, completely occluding it; tissues of both nostrils a dark red and very sensitive.

There is a follicular pharyngitis extending well up behind the velum palati, and, as I have often observed in this condition, there was an hypertrophy of adenoid tissue.

Each time a patient is asked to read and find words, very faint lines are used and repetition is usually heard only when the lines are passed against the ears; tuning-fork heard badly through the air, but placed upon forehead or behind the ears is heard quite well. Eyes are reddened, somewhat protuberant; "feel swollen"; tension slightly increased.

[illegible]

Quia H. = F. is a difficulty. Following some German writers, such as Harnack proceeding from the English source Zölling, the meaning of the compound had "a better quality" had become, with slight changes and in English, "strongest ground" and hence "strongest" is the sense that arises. It is not far from the West Saxon meaning, which means "strongest" or "strongest city." As it is thus possible here, the first sense, from the compound, is fitting here too. Hence, when

nauseating him; appetite poor. The patient looks pale, poorly nourished, and gives evidence of scrofula.

Examination of right nostril: Filled with a lobulated hypertrophy of lower turbinated tissue; left side is occluded by bony spur from the lower portion of the septum, meeting an hypertrophy of lower turbinate tissue. Pharynx studded with granules. Adenoid tissue hypertrophied, assuming a polypoid shape. Mucopurulent discharge from the nose and throat. The restoration of nasal respiration by the removal of occlusions and enlarged adenoid tissue, and three weeks' treatment of the catarrhal affection, improved his mental condition to the satisfaction of his parents and himself. He now breathes freely through the nose, sleeps quietly at night, and the voice is improved in quality and pitch.

CASE III.—S. A. W., Jewess, married, aged thirty years. Has always enjoyed good health until two years ago, when she suffered from repeated colds with severe headaches; then the nostrils became completely closed, at which time she began to have a slight cough which, though treated, became worse. The inability to breathe through the nostrils annoyed her, and the cough alarmed her to such an extent that she became hysterical. She now coughs day and night, attacks being so severe as to completely exhaust her. Examination of lungs reveals no change sufficient to account for severity of cough, a few mucous râles in right and left upper lobes. The left nostril is occluded by papillary growths springing from the septum, as well as from the lower and middle turbinate tissue; right nostril is partially occluded—that is, objectively, though patient can get no air through it, try as she may—by hypertrophy of lower turbinated tissue. The removal of this adventitious tissue slightly relieved her cough and partially restored nasal respiration. When right hypertrophy was sufficiently reduced, the posterior naris was seen to be completely closed by a thin shell of bone. From the septum, above one another, were three separate bony prominences. These, with the occluding shell of bone, were removed with an electric drill; the nostrils were now thoroughly patent, and with the return of nasal respiration the cough diminished, and at the expiration of two weeks had entirely ceased. Four months have now elapsed since this patient was discharged; she has no cough and no headache, and her attacks of hysteria have also stopped.

Just how this occlusion of the nostrils can be productive of a subversion of cerebration is not positively known, authors differing as to the manner of production of this mental derangement. Some have not had severe headache with an acute coryza; the eyes bloodshot, hot, and swollen; the nose completely closed by the acute swelling of the intranasal tissues, and a feeling of heat, heaviness, and tension across the bridge of the nose, and in the orbit, and in the throat sore, perhaps aching, and swallowing painful? And some have held that the derangement of the mind is due to the fact that the patient is unable to breathe, and that the brain is starved for oxygen. In either case, the derangement of the mind is a result of the physical condition, and is not a primary disease. In either case, the derangement of the mind is a result of the physical condition, and is not a primary disease. In either case, the derangement of the mind is a result of the physical condition, and is not a primary disease.

The Wayne County (Michigan) Medical Society.—A

report on the progress of the society during the year 1894. The society was organized in 1884, and has since that time been engaged in the study and practice of the medical profession. The society has held many meetings, and has published a journal. The society has also been successful in securing the attention of the public to the medical profession, and in securing the support of the government.

THE

NEW YORK MEDICAL JOURNAL, A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 15, 1894.

THE GAME OF FOOTBALL.

THE rough game of football, more especially as exemplified in recent intercollegiate matches, has been viewed by some of our contemporaries as occupying from a medical standpoint a position apart from other games of contention, and there has lately been more or less of a newspaper crusade against the sport as being exceptionally and dangerously brutal. It seems to us that the criticisms of the medical journals and those of the newspapers concern different aspects of the matter, unless, indeed, such statements as were printed in some of the papers a few days ago concerning the death of a young man in New Jersey are held to be worthy of consideration. The young man is said to have died of spinal meningitis, and the account goes on to say: "The disease was brought about by a kick on the nose received while playing football. The injury developed into a fibrous tumor, which was removed by a New York physician last week. The growth is believed to have extended to the brain and to have produced paralysis." All this is highly suggestive of the rubbish that has been printed—some of it, we regret to say, in medical publications—concerning the alleged horrors due to cigarette-smoking. If we are to deal soberly with the game of football from a medical point of view, we should concern ourselves rather with the influence of the game and of the training and practice incidental to it upon the health of the players than with its occasional complication of vicious or frenzied ferocity. If we take this stand, it is doubtful if more can be said against the game than that it is more likely to overtax the heart than the other games comparable with it. Sprains, ruptured muscles, and dislocated and broken bones are probably, all things considered, not to be assumed as more apt to occur in football than in the cane-rush, for example, and even the comparatively gentle game of lawn tennis is not wholly free from the danger of them. As for its tendency to produce grave injury to the health, it seems to us that football would not suffer in comparison with the tug of war, and we must add that it is far less injurious than rowing races. It is plain, however, that so exciting and turbulent a game as football, as at present played by our college boys, should not be undertaken by any but the robust and those who are fairly advanced in adolescence. The delicate and those of tender years had better avoid it, unless, indeed, under circumstances that insure a mild and fairly even contest.

As regards the alleged tendency of the game, whether considered from a medical or from a moral point of view, the question of a repression must be solved by the college faculties, the boys themselves, and their parents. It is not ours that they will look to the medical profession to assist them in attaining.

While we suggest its importance, we are not prepared at the moment to recommend in detail a definite form of guarantee of purity and adequate strength in this remedy, since it would be practicable and desirable for the protection of the public against carelessness or fraud. But we call your attention to the matter at this early period in the use of diphtheria antitoxine in the hope that at least a warning of the medical profession and the public against spurious and unguaranteed preparations of this remedy, if not more drastic measures, may seem to you wise and useful, and appropriate to the functions of this department as a guardian of the public health."

The New York Orthopædic Dispensary and Hospital.—

We learn that the following have been among recent contributions to the funds of the institution: From Mrs. Richard T. Auchmuty, \$10,000, to endow two free beds in perpetuity, in memory of her husband; from Mr. James H. Jones, \$5,000, to endow a free bed in perpetuity; from "a friend," \$4,000, to build a modern operating room; and from two of the trustees, \$500, to furnish and equip the same.

The West Side German Dispensary.—The members of the staff have founded a clinical society styled the Society for Medical Progress of the West Side German Dispensary. The officers are: Dr. Augustin H. Goelet, president; Dr. Lewis Morris and Dr. V. Fuentes, vice-presidents; Dr. Aristides Agramonte, secretary; and Dr. H. C. Hazen, treasurer.

The German Medical Society of the City of New York (*Deutsche medizinische Gesellschaft der Stadt New York*) is to hold a festival this (Saturday) evening, in the Arion Hall, Fifty-ninth Street and Fourth Avenue, to celebrate its thirty-fourth anniversary. The entertainment is to consist of a dinner, with ladies, followed by a ball.

The Northwestern Medical and Surgical Society, of New York, celebrated its twenty-fifth anniversary by a reception at the house of Dr. W. Gill Wylie on Thursday evening, the 13th inst.

Change of Address.—Dr. P. F. Chambers, to No. 450 Madison Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Dates of Officers serving in the Medical Department, United States Army, from November 25 to December 8, 1894:*

STILES, HENRY R., First Lieutenant and Assistant Surgeon. The commission of absence granted on a surgeon's certificate of disability is further extended two months on account of illness.

LYNCH, CHARLES, First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect on or about December 10, 1894, with permission to apply for an extension of one month.

McCAW, WALTER D., Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect on or about December 10, 1894, with authority to go beyond the sea.

PORTER, ALEXANDER S., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months, on a surgeon's certificate of disability, with permission to leave the Department at any time.

Naval Intelligence.—*Official List of Changes in the Medical Department of the United States Navy, for the week ending December 8, 1894.*

HARRIS, A. A., Medical Director, Ordered to the U. S. S. Albatross, for duty.

DICKINSON, DWIGHT, Surgeon, Attached to the U. S. S. Albatross, for duty.

DICKINSON, DWIGHT, Surgeon. Detached from the U. S. Revenue Steamer Richmond and ordered to the U. S. Steamer Minneapolis.

GATES, M. F., Passed Assistant Surgeon. Detached from the U. S. Revenue Steamer Richmond and ordered to the U. S. Steamer Minneapolis.

Society Meetings for the Coming Week:

MONDAY, December 17th: New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Wayne County, Michigan, Medical Society (special)—Detroit.

TUESDAY, December 18th: New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chautauqua (semi-annual), Kings, and Lewis (semi-annual), N. Y.; Baltimore Academy of Medicine.

WEDNESDAY, December 19th: Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Cortland (semi-annual) and Tompkins (semi-annual—Ithaca); New Jersey Academy of Medicine (Newark).

THURSDAY, December 20th: New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, December 21st: New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynecological Society.

SATURDAY, December 22d: New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

BANGS—HOYT.—In New York, on Wednesday, December 5th, Dr. Lemuel Bolton Bangs and Miss Isabel Hoyt, daughter of Mr. and Mrs. Reuben Hoyt.

VEDDER—BOULTBEE.—In Toronto, on Wednesday, December 12th, Dr. Harmon A. Vedder, of New York, and Miss Effie Boulton, of Toronto.

Died.

BROWNE.—In Washington, on Friday, December 7th, Medical Director John Mills Browne (retired), of the navy.

GAGE.—In Concord, N. H., on Monday, November 26th, Dr. Charles Pinckney Gage, aged eighty-three years.

MULVEY.—In Fresno, Cal., on Wednesday, November 14th, Dr. John S. Mulvey, of Loyal, Wis., aged thirty-six years.

PETERS.—In New York, on Thursday, November 6th, Dr. George Abelson Peters, in the seventy-fourth year of his age.

PINKHAM.—In Montclair, N. J., on Friday, December 7th, Dr. John W. Pinkham, aged sixty years.

SIM.—In Memphis, Tenn., on Tuesday, November 27th, Dr. F. L. Sim, aged sixty years.

STRICKER.—In East St. Louis, on Monday, November 26th, Dr. C. F. Stricker, aged forty-three years.

VAN WINKLE.—In New York, on Friday, December 7th, Dr. Edward Henry Van Winkle, in the sixtieth year of his age.

Obituaries.

CHARLES PINCKNEY GAGE, M.D., OF CONCORD, N. H.

By Dr. Gage's death, which occurred in Concord on Monday, November 26th, the New Hampshire profession loses a member who had through his strong sense, his energy, and who had commanded the respect of his fellow-practitioners.

Dr. Gage was born in Hopkinton, N. H., on April 5, 1811. He obtained his medical education at the Dartmouth Medical School, at Woodstock, Vermont, at Pittsfield, Massachusetts, and at the Cincinnati Medical College, at which he was graduated. He was induced to go to Cincinnati by the fact that the late Dr. Willard Parker, of New York, had at the time just been appointed to the chair of surgery in the Cincinnati school, and there had sprung up between the two a liking that lasted up to the time of Dr. Parker's death. Dr. Gage practiced in Cincinnati for a time, but returned to New Hampshire for the sake of his health, and entered upon his long and honorable career in Concord. He had a decided bent for surgery, in which he displayed great ability. He was one of the original members of the American Medical Association, and had been president of the New Hampshire Medical Society.

GEORGE ABSALOM PETERS, M.D.

DR. PETERS died in New York on Thursday, the 6th inst. He was a native of the city and a graduate of the College of Physicians and Surgeons, of the class of 1846. During his medical course he was a private pupil of the late Dr. Alfred C. Post. After his graduation he served the prescribed period on the house staff of the New York Hospital, and a few years later he was appointed a surgeon to that institution, also to St. Luke's Hospital. At the time of his death he was a consulting surgeon to the hospitals mentioned and to St. Mary's Hospital, the Woman's Hospital, and the New York Infirmary. Although his hospital work was wholly surgical, he was for many years one of the most successful and popular of the general practitioners of New York. As a hospital surgeon, his services to public teaching, but to the small circle of the house staff he was an invaluable teacher and a personal friend, ever ready to guide them through their difficulties and to appreciate the difficulties with which they had to contend. The most serious patients and estimable traits, and although he had actually been out of practice for the last few years, he had kept up his interest in professional medicine, so that his knowledge was wide and

gave Indians a knowledge of the use of this herb, which, I think, was not a common thing.

In those days physicians were not to be had readily, and clergymen and others prominent in communities were frequently called upon to prescribe for their suffering fellow-creatures, and my grandfather frequently gathered, prepared a decoction of, and administered this root, as I have always understood, with great success in cases of dropsy. I remember distinctly about the year 1847-'48, though but a little boy, accompanying my grandfather to the woods to gather these herbs. Among the whites the herb came to be known as Indian hemp and also as wandering milkweed.

In the year 1844 my father, Dr. P. W. Gray, engaged in the practice of medicine in the city of Buffalo. My grandfather was in the habit of digging this root and others for his three sons, who were physicians, and sending them preparations, all from an innate love of the art of healing, and in this manner my uncle, the late Dr. John F. Gray, of this city, became possessed of a knowledge of the value of the remedy. In 1866 I used apocynum freely, under his direction, in the case of the wife of the poet Bryant, who was very ill at that time with cardiac dropsy.

Professor Valentine Mott, and others in his day, used the drug, usually in the shape of a decoction. The late Dr. John C. Peters experimented with it considerably, even upon himself, and wrote quite freely as to the results obtained; and this occurred in the fifties. A preparation called Hunt's decoction of apocynum became quite celebrated in the professional circles of the day, and was used with varying success in renal, cardiac, hepatic, and so-called idiopathic dropsies. I have in my possession considerable literature upon the subject.

Professor Austin Flint, in his lectures of the winter of 1865-'66, spoke of the use of the remedy in ascites, and I find that he refers to it in his *Practice*, page 599, edition of 1866. Professor Flint came from Buffalo; and in the forties, Dr. Lockwood, whose name has been associated with the use of the drug, was a neighbor and friend of my father.

Thus the *nunquod* of the Cattaraugus Indians is, I think, traced down to the present valuable *Apocynum cannabinum*.

ROLLIN B. GRAY, M.D.

A TESTIMONIAL TO SIR JOSEPH LISTER.

London, November 10, 1874.

To the Editors of the New York Medical Journal.

SIR: Sir Joseph Lister having recently retired from active hospital and teaching work, the occasion has been thought appropriate for presenting him with a testimonial of the esteem in which he is held by his fellow-practitioners, and especially by those who have been benefited by his teachings. We have, therefore, signed the enclosed, and have caused it to be printed and bound, and have caused it to be presented to him by the undersigned.

It is proposed that the enclosed testimonial be presented to Sir Joseph Lister at his residence, 10, Grosvenor Gardens, London, on the 15th inst. The enclosed testimonial is signed by the undersigned, and is intended to be presented to him by the undersigned, and is intended to be presented to him by the undersigned.

The enclosed testimonial is signed by the undersigned, and is intended to be presented to him by the undersigned, and is intended to be presented to him by the undersigned. The enclosed testimonial is signed by the undersigned, and is intended to be presented to him by the undersigned, and is intended to be presented to him by the undersigned.

Letters to the Editor.

APOCYNUM CANNABINUM

NEW YORK MEDICAL JOURNAL, NEW YORK, November 10, 1874.

To the Editors of the New York Medical Journal.

SIR: It is interesting to see the description of Apocynum cannabinum in your issue of the 10th inst. The enclosed testimonial is signed by the undersigned, and is intended to be presented to him by the undersigned, and is intended to be presented to him by the undersigned.

It is interesting to see a remedy, as I mentioned in your issue of the 10th inst. The enclosed testimonial is signed by the undersigned, and is intended to be presented to him by the undersigned, and is intended to be presented to him by the undersigned.

William Rose, 17 Harley Street, London W., England; Dr. Malloch, 124 James St. South, Hamilton, Ontario; or J. Stewart, M. B., 87 South Street, Halifax, Nova Scotia.

I have the honor to remain, sir, yours faithfully,

J. FREDK. W. SILK, *Honorary Secretary.*

P. S. Two guineas are about \$10.23.

UNDERSIZED BABIES.

FRANKFORT, KY., November 28, 1894.

To the Editor of the New York Medical Journal:

SIR: On page 664 of the current volume of your journal is a communication from Dr. Smith on Undersized Babies, and it seems remarkable and will embolden me to put on record my experience with an "undersized."

On the 28th of November, 1866, I delivered a lady of a living male weighing a pound and a half (twenty-four ounces), according to the mother's count after seven months and a half of gestation. The child was so small that I put it into a goblet (one of those old-fashioned dinner goblets), flexing its thighs on its abdomen, and with another goblet of the same size inverted placed over its head, and the rims of the two touched without very firm pressure being made. Artificial feeding was used, and the child was enveloped in cotton wood rather than dressing for two months. He lived and grew to manhood, and I saw him yesterday, hale and well, weighing a hundred and thirty-five pounds.

U. V. WILLIAMS, M. D.

MALTOSE VERSUS GLUCOSE.

SPRINGFIELD, MASS., December 19, 1894.

To the Editor of the New York Medical Journal:

SIR: Your types impair the value of my letter in your issue of the 8th inst., criticising some of Dr. Eccles's statements. By omitting a line and getting parts of two others mixed up I am made to misrepresent what the professor really did say. Thus: "For has he not told us that 'amyllopsin takes the place of ptyalin and digests albuminoids.'" No, he did not tell us any such thing. What he did tell us, and what I really wrote, was: "Amylopsin takes the place of ptyalin and digests starch (not albuminoids, as printed). The trypsin takes the place of the pepsin and digests the albuminoids." This is shown by the statement a few lines further on: "The two ferments mentioned" (you make me only mention one). Criticism is one thing; misrepresentation, quite another.

DANIEL E. KEEFE, M. D.

Proceedings of Societies.

THE NORTH HAVEN VALLEY MEDICAL ASSOCIATION.

Transactions of the Association, held at North Haven, Vermont, on Tuesday, November 13, 1894, and Friday, November 16, 1894, at 10 A. M.

The President, Dr. Thomas C. Bennett, of Concord, in the Chair.

The Deformities of American Women resulting from Neglect of Physical Exercise and from a Conventional Mode of Dress were discussed by Dr. J. H. Harrison, of Bath, Me., at the annual meeting of the

Diseases of the Accessory Nasal Cavities, their Influence upon the Organs of Sight, and their Modern Surgical Treatment, was the subject of a paper by Dr. C. R. HOLMES, of Cincinnati (to be published).

Hydrocele.—A paper on this subject was read by Dr. W. C. WEBER, of Cleveland, who reported a satisfactory experience with the injection treatment.

The Treatment of Traumatic Cataract attended with Rapid Swelling of the Lens.—Dr. JAMES M. BALL, of St. Louis, read a paper in which he advanced this proposition: In cases of traumatic cataract with rapid increase of intra-ocular tension an operation should be performed, and it should not be linear extraction, but an extraction made with the Graefe knife, and with the incision located in the corneo-scleral junction. The knife should cut from one third to two fifths of the corneal circumference, according to the extent to which the softening process in the lens has advanced. If glaucomatous symptoms supervene, with softening of only a small part of the lens, the corneal incision should be large. If the softening involves the whole of the lens, the incision should be less extensive. The chief merit of the operation, said the author, lay in the avoidance of the valve which was produced by the linear method. In other words, the author's method permitted of free evacuation of all the lenticular substance with the least amount of traumatism. Iridectomy was not made. All *débris* were removed at once. This could not be accomplished by the linear method. The author then reported two very instructive and interesting cases.

Some Observations on Sore Throat due to Concretions in the Tonsils was the title of a paper (to be published) by Dr. LEWIS C. CLINE, of Indianapolis.

Squint, with Special Reference to an Operation, was the title of a paper by Dr. CHARLES H. BEARD, of Chicago, who favored tenotomy with advancement in decided cases.

The Removal of the Auditory Ossicles for the Relief of Chronic Deafness and Other Abnormal Conditions was the subject of a paper (to be published) by Dr. ROBERT C. HEFLER-BOWLER, of Cincinnati.

Stab Wounds of the Pericardium was the subject of a paper by Dr. H. C. DALTON, of St. Louis, who gave the history of a case in which recovery had followed resection of a rib and suture of the pericardium, the latter having been done chiefly to prevent the formation of extensive adhesions.

The Neatest Method of Circumcising.—Under this title Dr. BRANSFORD LEWIS, of St. Louis, described his modification of the clamp operation. A rubber band was first applied to the root of the penis, to prevent the cocaine employed as a local anæsthetic from entering the general circulation; then the mucous layer of the prepuce was seized from within by means of a forceps of special construction, and drawn forward before the clamp was tightened, thus obviating the objectionable feature of the ordinary clamp operation—namely, that of leaving the mucous layer longer than the cutaneous.

The Management and Treatment of Endometritis and the Prevention of Tubal and Ovarian Diseases was the title of a paper by Dr. WILLIAM H. HUMISTON, of Cleveland, in which the author said that nine tenths of all patients that he treated suffered from some form of endometritis, and its baleful influence on the sympathetic nervous system was marked and manifested by numerous and varied symptoms. The first and important principle in treatment was to relieve the passive congestion of the uterus, and this was accomplished by medicated tampons. The first tampon should be medicated with boric-acid, iodoform, or creolin, and supported by astringent, non-absorbent cotton tampons. Much good was effected also by the use of endometrium with the negative electrode within the uterus. The operation must be treated on modern

surgical principles—with rest, asepsis, drainage, and curetting. When the cases were diagnosticated early and the proper treatment instituted, the abdominal surgeon would not have his belt hanging full of surgical rules and regulations.

The Early History of Rectal Diseases was the title of an historical paper by Dr. S. R. GAY, of Kansas City, Missouri, the earliest known mention of piles to Mexico.

Headaches of Extracranial Origin was the title of a paper by Dr. FRANK WOODBURY, of Philadelphia, read by Dr. I. N. LOOM, of St. Louis.

The Surgical Treatment of Injuries of the Head, Trephining for Blood-clots and Pressure.—A paper of an interesting clinical paper by Dr. R. L. HARRIS, of St. Louis, Texas.

Exercise Essential to the Proper Development and Maintenance of Function.—Dr. E. H. McCULLERS, of St. Louis, discussed a paper of this title, read by Dr. J. H. GIBSON, of St. Louis, Texas.

Remarks on the Relation of Residual Urine to Vesical Irritation, Especially in Prostatitis.—Dr. G. FRANK LYSTON, of Chicago, read a paper of this title, read by Dr. J. H. GIBSON, of St. Louis, Texas.

Incidental to certain chronic bladder diseases, especially in cases of prostatic enlargement, were dependent upon the accumulation of residual urine. He had long been impressed with the idea that residual urine *per se* was not so important a factor in genito-urinary irritation as was ordinarily believed. He was satisfied that in a large proportion of men there was always a more or less residuum of urine remaining in the bladder after micturition. If prostatic enlargement or other obstruction attacking the mouth of the bladder developed, there was the typical accumulation of residual urine characteristic of such cases. It would then be seen that there might be at varying periods of life extreme differences in the degree of accumulation of residual urine. The author believed that the residual urine was simply an incident upon which, if taken alone, the symptoms of vesical irritation in no wise depended. Ideally perfect drainage of the *bas fond* could be accomplished only by through drainage from above the tube through the trigone and out of the rectum. There were certain objections to this method which it was not necessary to dilate upon. He simply stated it as his opinion that only by some such procedure could the *bas fond* be thoroughly drained.

Double Nasal Atresia due to Small-pox.—Dr. HANAU W. LOOM, of St. Louis, reported a very interesting case of double operative interference.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of Monday, Dec. 11, 1894.

The President, Mr. Dr. FRANK WILKINS, in the Chair.

Destructive Lesions in Acute Tubal Inflammation. Dr. GEORGE L. FORD, of Philadelphia, reported a case of tubal inflammation in which there was a destructive lesion of the tube. The patient had been treated with salicylate of soda and had recovered. The tube was found to be destroyed. The author stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed.

The author stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed.

ly made to physical examination; and, in the event of doubt, to the highest court available.

The present object was to present again the fact that inflammation of the Fallopian tube also might be rapidly destructive, with the formation of pus in quantity great enough to endanger life through softening and rupture of its limiting wall, whether that pus was highly infective or not. The analogy between the appendix and the tube was not without interest. Both were free in the peritoneal cavity, supported along the edge of a membranous fold; both had muscular, mucous, and peritoneal coats.

They were not unlike in size, though varying greatly; while as to situation, the right tube lay very near and often in contact with the appendix, being frequently involved in the same inflammatory process. They were exposed from within to diverse forms of infective bacteria, but either might be infected from the other by continuity after adhesions had formed.

Catarrhal inflammations which did not go on to pus formation or degeneration of tissue occurred in both structures, but more frequently in the tube, owing to its greater vicissitudes from situation and function.

The very rapidly progressive inflammations, however, going on to gangrene, rupture, and death from peritonitis within three or four days, were relatively common in the appendix and rare in the tube, the destructive process usually taking much longer in the latter case, though everything depended on the character of the infection. A rapidly fatal case with gangrene of the tubal mucous membrane had been mentioned by J. Bland Sutton.

One cause of this difference was mechanical. In the case of the appendix, a hard body, usually fecal, just filled the lumen before the attack began. The swelling of the mucous membrane made the lumen too small for the body inside; pressure resulted which, aided by the ever-present bacterium, in a few hours caused strangulation and local death. In the tube, on the other hand, there was no foreign body and no local pressure, rupture occurring later at a point gradually thinned by inflammation and local absorption.

Another reason for the relatively greater protection of the general cavity of the peritoneum in the case of the tube was anatomical. Between its peritoneal covering and the muscular coat was a quantity of loose connective tissue, which, becoming thickened and distended by inflammatory cell infiltration, greatly strengthened the natural barrier against infection from within in the early stages of the disease, and gave time for the forma-

tion of adhesions. The tube, on the other hand, was covered by a single layer of peritoneum, and the muscular coat was directly in contact with the peritoneum. The tube, on the other hand, was covered by a single layer of peritoneum, and the muscular coat was directly in contact with the peritoneum.

back, showing the central rodlike portion undistended and still intact. That portion of the tube was not irretrievably injured and, perhaps, in some cases, the tube might be preserved even after the destruction of the muscular coat. The author stated that he had seen several cases of tubal inflammation in which the tube was destroyed.

The author stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed. He stated that he had seen several cases of tubal inflammation in which the tube was destroyed.

mesosalpinx were separated until tube and ovary were in contact and adhesion occurred, or else tube and ovary adhered directly without splitting the mesosalpinx. The tube wall became thin and the ovary became involved secondarily through a distended ovarian follicle, when tubo-ovarian abscess resulted. The ovary now enlarged until its pus contents frequently exceeded those of the tube, and measured several ounces.

The after-history of these cases, if they escaped an early death, was usually made up of progressive invalidism varied by intervals of relief, if by chance the pus emptied intermittently into the bowel or bladder.

When the abdominal end of the tube did not close quickly enough, peritonitis, which might or might not be limited, was set up by direct escape of fluid from the end of the tube.

The speaker exhibited a tube, and said that, although shrunken by several months' immersion in alcohol, it served to show the condition of the tube and its free communication with the ovarian sac. The point of softening and imminent rupture was seen as a small opening. It would be difficult for him to believe that these extreme changes had occurred so rapidly had he not had an opportunity of mapping out the parts beforehand.

Another specimen exhibited in its different parts stages in the progress of salpingitis. Near the uterine end of one tube which had been split could be seen the greatly swollen longitudinal folds of mucous membrane not yet adherent together. Mucous surfaces did not adhere, when inflamed, as early as did serous surfaces. These folds, when swollen, very tightly filled the tube, so that it felt hard, and when it was cut longitudinally they appeared to have been inclosed in a space too small for them, so that the incision would not close again. Farther out in the dilated ampulla pus had been found, and the structures were extensively altered in appearance. The fimbriated end had been sealed by covering in the fimbriae and packing them together inside the tube, the serous covering swelling and uniting outside of them. Though they were somewhat adherent together, they still could be distinguished. Later on in the disease they would become disorganized or lost in the wall of what had become simply a pus sac with a smooth, rounded end.

Dr. M. Price said he had been much pleased with the report and with the success of both operations. He thought that he could not exactly agree with the doctor in considering a case of eighteen days' duration as altogether acute. Many of these cases went on to a fatal termination before going to such a length of time. He had seen cases of gonorrhœal salpingitis where the gonorrhœa had existed only a few weeks, and the ovarian and tubal trouble only a few days, when the tube had been removed with pus pouring from its end. The gonococcus

suffering, and the peritonæum had been educated, as it were, to bear almost anything.

The only thing that he could criticise, and he could do that conscientiously, was the use of gauze drainage. If glass drainage alone had been used it could have been removed at the end of thirty-six hours. There was always sloughing and dirt following gauze drainage. While he used it in abscesses where the peritonæum had not been opened, he insisted on its removal at the end of twenty-four hours, and its reapplication. Where gauze packing was used within the peritonæum the membrane was exposed to injury, and the viscera were wounded in its removal, as it adhered to everything, and its removal required considerable force, unless it was left for a long time. With gauze drainage we ran fifty per cent. more risk of death than if glass drainage alone had been used.

Dr. Senn had recently asserted that glass drainage caused fecal fistula. He could select the cases that were going to have a fistula. At the time of operation in cases of abscess of the ovary or tube which had been allowed to run on for a long time, with several attacks of pelvic inflammatory trouble, we would often find a necrotic bowel requiring the use of the Murphy button for resection. If glass drainage was used with care, and the tube properly placed, the chance of avoiding fecal fistula was very good, and the patient was safe. In a case operated on during the past year he had been sure that there would be an injury to the bowel, for the abscess on the left side had several times discharged through the bowel, and he knew that there had been a sinus or such adhesions as would necessitate wounding the rectum. In this case a drainage-tube had been placed in the left *cul-de-sac*, and within forty-eight hours feces poured out by the tablespoonful. That case went on as nicely as could be, and the patient had recovered. He could point out four or five cases in the past year where, before the operation had been completed, there had been every reason to expect fecal fistula, and in every case recovery had occurred without difficulty.

Where feces were discharged through the drainage-tube a little different treatment was required. The tube should be left until we were sure that the drainage tract had been mapped off from the general peritoneal cavity. The treatment of this drainage tract was a matter for consideration. It should not be touched with a syringe, or any attempt made to clean it below the skin. If we did there would be complications and injury to surrounding viscera, giving a fistula which was incurable. All these patients should get well, and the charge that the drainage-tube was responsible for fecal fistula, the speaker thought, was a great mistake. He had seen thirty fecal fistulae, and every one had healed under the treatment mentioned above.

Dr. G. G. Davis said that his observation did not correspond with that of Dr. Price, that fecal fistula always healed. He had seen several fecal fistulae, the result of abdominal operations, that had not healed. He could not see why the simple cleansing of a fecal fistula should retard its healing, and he did not believe that it did. Dr. Price's objection to the use of the syringe might be a good one if the nozzle of the syringe was long, and it was thrust in deeply and sufficient manipulation made to materially disturb the parts; but that would be followed by hemorrhage, and he thought that no one in cleansing the parts would use such violence. If all the patients that Dr. Price had seen had recovered, his sources of information must be limited.

Dr. Price replied that Dr. Davis stated that he had seen patients that did not get well, and he admitted that the syringe had been used and that there had been a good reason for the failure to close. Every fistula which was syringed did badly. The great objection to the tube and not had were those due to tubercular cases. There was also another class that did not close, and that

a small hole on either side, and fastened a small coil of wire like a bail to a bucket. To the small end of the tangle I attach a half-inch hose by simply slipping it over, and of any length desired.

When I want to irrigate I introduce the speculum, make all necessary examination, and then attach the funnel, slipping the handles of the instrument into the mouth of the funnel, which has the convex surface to the perinæum, the bail and flat side out. I next slip the coil bail over the rim of the speculum, where it holds the funnel snug and tight. In this way an irrigation of any quantity may be made in the bladder, the uterus, the vagina, or even the rectum, without soiling the clothing or annoying the patient. I have used this plan for a year, which I decided to do before I reported it, and I am pleased with it more now than originally.

I like it because I can treat patients and not soil the clothing. It is never in the way, and is easily arranged and cleaned. It is inexpensive and can be used with almost any speculum but Sims's. It forms a joint with the speculum, and, if the patient is not just in the proper posture, it acts just the same, unless bent so far as to allow of overflow, which is all that is necessary to watch.

Every physician who does this kind of treatment can readily secure one of these funnels for fifty cents, make the rest himself, and be thoroughly equipped for this work to his entire satisfaction, I believe.

It seems so simple that many may have used this plan before, but to me it was original.

I have thought I should get a larger tube to one funnel for curtetting, but this is hardly as important as it might seem, for in these cases it is hardly necessary to have an escape of this kind. As I have been using it, I am perfectly satisfied, and think those who try it will be also.

Miscellany.

Hydrotherapy in the Treatment of Pulmonary Tuberculosis.—The November number of the *Therapeutic Gazette*

oath-rub, and *Cast.* followed by *Cast.* and *Cast.* friction: it acts more powerfully than the cold rub. The temperature of the water is to be graduated in the same manner as for the cold rub; the contraindications are actual or recent hæmorrhage or bloody expectoration, great general debility, and the presence of the menstrual flow. It is best suited for the early stage.

The cold shower-bath is given in an empty bath-tub, with the same regulation of temperature of the water: the time should at first be very brief, and should never exceed two or three seconds. Dry friction must follow. It acts still more powerfully than either the cold rub or the cold bath. It should not be used with patients who are weak and have a subnormal temperature, who react slowly from the rub or from the bath, or who have at the time acute processes in the lungs; hæmorrhage or menstruation also forbids its use. The temperature must be slowly reduced. In one form or another, says the author, these cold applications become the daily practice in every case during the entire course of the treatment, and must be recommended for regular employment after a cure has been established. Their effect soon becomes manifest in a better cutaneous circulation; the patient feels exhilarated, and the appetite improves. Whatever may be the value of the cold bath in fever accompanying other diseases, Dr. von Ruck warns us against its use in septic fever; any immersion, he says, in water cold enough to reduce the temperature materially in such debilitated subjects is fraught with the greatest danger of severe pulmonary congestion, hæmorrhage, and heart-failure. For the purpose of reducing the temperature he has discarded every other measure than the ice-bag and the cold pack, which he finds of great value. The temperature of the water is quickly reduced from 90° to 60° or 50° F.; the latter degrees can, as a rule, be reached in three or four days.

In cases where the temperature rise begins with a chill, retention from the latter must be established before the cold water is applied, and the author has frequently averted the chill by using hot-water packs for an hour before and for an hour after the time at which the chill had occurred on the previous day; then reducing the temperature of the water from five to ten degrees lower for each change until the desired cold is reached. The packs are changed from every fifteen to thirty minutes or less frequently, according to the degree of fever, the temperature of the water used, and the effect obtained, and this is to be kept up the entire period of the day during which the temperature is above 100° F. When the process is discontinued for the remainder of the day or night, the chest is washed off with alcohol and rubbed with a little coconut oil. Apart from the slight chilly sensation when the pack is applied, a few patients complain of transient chills, and one patient complains of temporary loss of appetite. In such cases the temperature of the water must be increased and stimulants administered. One patient who was unable to tolerate the treatment on her own account, because of the chill, was cured by the application of the cold water packs, and another who was unable to bear the cold water packs, because of the chill, was cured by the application of the cold water packs.

The results of the treatment were satisfactory.

which always helps, and often turns the scales in the right direction.

The Final Prognosis of Renal Manifestations of Scarlatina. *Le Congrès international de médecine interne*, which opens for November 10th contains a review of a work on this subject by M. Alfred Lid. In the first chapter the author briefly speaks of the varieties of albuminuria that are met with in scarlatina. The second chapter contains a critical study of the different interpretations relating to the evolution of the albuminuria of scarlatina. The third chapter treats of varieties of albuminuria or renal lesions observed after a long time, among subjects previously attacked with scarlatina, of the course of these manifestations and of the rôle of certain etiological conditions. The last chapter deals with the prophylactic and therapeutic consequences which spring from the preceding conditions. The essential conclusions, says the writer, are: 1. That the albuminuria of scarlatina, a manifestation of multiple and variable lesions, is either transitory or permanent. 2. That scarlatina exercises not only an immediate action on the kidneys, but also a remote action. 3. That the remote renal manifestations of scarlatina correspond to several types governed by the degree of the anatomical alteration of the kidneys.

An Early Sign of Pericarditis.—At a recent meeting of the *Congrès français de médecine interne*, a report of which appears in the *Journal des praticiens* for November 24th, M. Jossier advised physicians to look for the indication from the outset of the disease, as it would appear early, preceding the appearance of the friction sounds. On auscultation at the base of the heart in acute rheumatism, first at the situation of the aortic murmur and then at the situation of the pulmonary arterial murmur, the second sound is sometimes found to be more intense at the latter point, also louder, clanging, so to speak. The reverse of this is observed in chronic aortitis, where the murmur is louder at the right side of the sternum than at the left. Sometimes, also, this difference is easily felt by the hand (exaggeration of the diastolic shock of the pulmonic valves). The existence of this sign would lead us to look for the friction sound, which is often discovered at that time, when a superficial auscultation would have allowed it to be overlooked. This condition of the second sound is transitory; it precedes the friction sound by from one to three days, then disappears rather quickly, and the friction sound replaces it.

In acute pericarditis, says M. Jossier, the friction sound is situated along the left border of the sternum and above the apex. The subjacent myocardium in the neighborhood of the infundibulum of the pulmonary artery is congested and covered with fibrinous deposits. It is this which increases the pulmonic sound.

M. Jossier states that the clinical value of the sign is considerable, because it enables us to determine the diagnosis previously, and to institute preventive medication at the proper time.

Pixil in the Treatment of Certain Cutaneous and Venereal Affections.—In an article on this subject in the *Progrès*

de médecine, the author states that the latter is most valuable in the treatment of the following affections: 1. Eczema, 2. Psoriasis, 3. Scabies, 4. Syphilis, 5. Gonorrhea, 6. Chancres, and wounds resulting from opening virulent buboes.

The New York Medical College.—This institution, which graduated its last class in 1864, must still have a large number of graduates scattered through the country. A pamphlet giving a complete list of the officers and graduates of the college, together with a short sketch of the institution and its charter, is of recent publication, although dated 1883. It was prepared by the late Dr. Edward Hamilton Davis, who was a member of the faculty, and has been revised, we understand, by Professor R. Ogden Doremus, an ex-member of the faculty. Mrs. Zaidee Scott Davis informs us that she will furnish a copy of the pamphlet to any graduate of the college who may desire it. Mrs. Davis's address is No. 25 West 119th Street, New York.

The Late Dr. Stuart Douglas.—At the seventieth stated meeting of the Society of Alumni of Bellevue Hospital, held at the Hotel Brunswick on Wednesday, December 5, 1894, the following resolutions were adopted:

Whereas, In the death of Dr. Stuart Douglas the Society of Alumni of Bellevue Hospital has lost one of its most esteemed members and friends, whose ability had already brought distinction and gave promise of a brilliant future; therefore be it

Resolved, That this society extend to the members of his family their most heartfelt sympathy; and be it further

Resolved, That this resolution be spread upon the minutes of the society and a copy sent to his family and to the medical press of New York and Virginia.

MATTHEW D. FIELD,
WILLIAM E. STUDDIFORD, } Committee on
JOHN M. BROOKE, } Resolutions.
WILLIAM NORRIS HUBBARD, Secretary.

Thermogenics.—To the tune of *Wing Tee Wee*, with apologies to Mr. Tarbell.

The M. V. M. Association,
A clan of M. D.'s bold,
With their wives and friends by invitation,
Did, like knights of old,
Rally to the Quachita,
And thereof one night a tale unfold.
Yes, sah! Ha, ha! 'Rah, 'rah? Whoop-la!

Yes, if I list, too much discover,
Of Love and his pranks galore;
For Cupid and Venus round the place do hover,
And many are their victims sore.
But a balm is found upon the spot
In the healing waters from the hills that pour
Red-hot! Sure-shot! Jack-pot! Great Scott!

Oh, classic ground is "The Vale of Vapors,"
Where the nymphs their heads ne'er hide;
Here Mercury cuts peculiar capers,
And Hygeia doth abide—
I'm sure, for Holland told me so—
And 'twas here, they say, that he died.
So, sah! 'Rah, 'rah? Whoop-la!

Our one-score meet was a true ovation,
Delightful to all, I trow;
For, aside from the feasting and potation,
We've added to the things we know;
But God forbid we should be taken down there,
Where, as the saying is, "The Devil's in the fire."
Oh, Ah! Sweet Spot! Ah, Sweet Spot! Fie, fie!

C. H. BRADY

Original Communications.

HYPNOTISM

A UNIVERSAL ANÆSTHETIC IN SURGERY.

By THOMSON JAY HUDSON,

WASHINGTON, D. C.

THE question has often been asked, "Can hypnotism be generally used as an anæsthetic in surgery?" The answer has uniformly been that it can not. Both of the great schools of hypnotism—the Nancy and the Paris schools—unite in the emphatic declaration that "it can not take the place of chloroform." The reason given is that it is impossible to hypnotize a person at the time of an operation except in the comparatively rare cases where the patient has previously been in the habit of being hypnotized. It is generally admitted by all modern scientific writers on the subject that hypnotism can be successfully employed as an anæsthetic in the most severe surgical operations, under certain exceptionally favorable conditions. The first of these is stated above, and the second is that a state of profound hypnotic sleep must first be induced. Most writers dismiss the subject with a statement equivalent to the foregoing.

The object of this paper is not so much to call in question the correctness of the conclusions of writers on this subject as to suggest an entirely new line of inquiry with a view of ascertaining if Nature has not provided a universal anæsthetic in a condition cognate to that of hypnosis. Confining the latter to its original signification, or to that of its Greek radix, it means, simply, "sleep." And it seems probable that the conclusion of the hypnotists regarding the use of hypnotism in surgery may have been influenced by the limitations of the signification of the term; although Bernheim has pointed out that the power of suggestion (which is the potent factor in hypnotism) is not confined to the sleeping patient. Indeed, Bernheim's definition of hypnotism enlarges its scope far beyond the limitations of the Bradian definition, which is "induced sleep." He says: "I define hypnotism as the induction of a peculiar psychical condition, which increases the susceptibility to suggestion."* For the purposes of this article this definition will be accepted as substantially correct.

Before proceeding to the main line of argument it may be well to give the new professional reader a short résumé of the meaning of the word "suggestion" as it is employed in hypnotic literature. Bernheim is a sufficient authority for a reader of his hypnotic subject. The general opinion is the best that in the hypnotic condition the subject can heartily believe the statement of suggestion, and accept upon it just as though it were true. Thus, the suggestion may be made that the subject is a dog, or a bird, or an angel, or any kind of creature, and he will act in the manner characteristic of the creature, within the limits of his intellectual and physical power, fully believing the suggestion to be

true. Its potency as a therapeutic agent consists in the fact, first, that a subject in the hypnotic state is constantly amenable to control by suggestion; second, that in the hypnotic state the subject has complete control over the functions and sensations of his body; and, consequently, that if the suggestion is made to a hypnotized subject that he feels no pain, all pain instantly ceases. It is thus that a state of anæsthesia is induced which enables a surgeon to amputate a limb without inflicting the slightest pain upon the patient.

Bernheim pertinently remarks that "it is suggestion that rules hypnotism." This is true in the sense that when a subject is in the hypnotic state he is constantly amenable to control by the power of suggestion. This is the fundamental law of hypnotism. It is also true that hypnotism may be induced by suggestion. The Nancy school holds that it is and can be induced in no other way. This, as I have elsewhere* pointed out, is a fundamental error; and it is an error that has led to many erroneous conclusions regarding psychic phenomena of various classes.

It is also an error to suppose that it requires a state of profound hypnotic sleep to induce a state of anæsthesia. It is this error that has led to the belief that hypnotism can not be generally employed as an anæsthetic in surgery. It is my belief that in a great majority of cases it can be successfully so employed. I do not pretend to dogmatize on the subject. It is too early for that. But I do say that there are facts in abundance which point in that direction; and they are facts within the common knowledge and experience of mankind. I propose to invite the attention of the medical profession to a few of these facts for the sole purpose of stimulating inquiry and suggesting a line of experiment, which may or may not lead to important results, but which can at least do no harm. If successful, they will demonstrate the existence of a law, hitherto unsuspected, which, properly understood and intelligently applied, will enable the profession to employ hypnotism as a universal anæsthetic in surgery.

The fundamental propositions of my hypothesis are few and easily understood. They are:

1. Persons in the hypnotic state are constantly amenable to control by suggestion.

2. The hypnotic state can be induced without the aid of suggestion.

The first of these propositions is hypnosis or hypnotism, and the second is induction. It is so labeled, however, the fundamental law of hypnotism, and little time will be employed in its elucidation. It is, however, not so generally known that the proposition is true of all persons and of almost all hypnotisms. Bernheim has more than pointed out the fact that suggestion is not used merely as a means to what he terms the "waking state." It will be said he doubted whether one could be perfectly normal, and that he is influenced by suggestion so far as to produce an autohypnosis. That is to say, it must not be understood that the term "waking state" implies that the patient is in an *active* hypnotic state. It will mean that the patient is

hypnotized in so slight a degree that he appears to be awake and in his normal condition. There must always be some degree of hypnosis—some abeyance of the objective senses—to render the subject amenable to control by suggestion. But that degree may be very slight, as the following observations by Bernheim will demonstrate:

"Some of them at least show exactly the same phenomena in the waking condition as in the hypnotic state; some exhibit suggestive catalepsy with muscular contraction, or a varying contracture only; others, catalepsy with automatic movements; others, at the same time, suggestive sensitive-sensorial anesthesia; and others still, all suggestive phenomena up to hallucination." (*Suggestive Therapeutics*, p. 79.)

Again, on page 81, we find the following:

"In one of my somnambulistic cases (S—, whose history I have already given) I can obtain all possible modifications of sensibility in the waking condition. It suffices to say, 'Your left side is insensible.' Then, if I prick his left arm with a pin, stick the pin into his nostril, touch the mucous membrane of his eye, or tickle his throat, he does not move. The other side of his body reacts. I transfer the anesthesia from the left to the right side. I produce total anesthesia, which was, on one occasion, so profound that my *chef de clinique* pulled out the roots of five teeth which were deeply imbedded in the gums, twisting them around in their sockets for more than ten minutes. I simply said to the patient, 'You will have no feeling whatever.' He laughed as he spit out the blood and did not show the least symptom of pain."

On page 83 the following case is related:

"In G— (Marie, whose case I have already related) I can induce catalepsy, automatic movements, anesthesia, and hallucinations in the waking condition. I wish only to speak of the anesthesia. After having ascertained that sensation throughout the body was perfect, I said to her, 'You have absolutely no more feeling in your right upper limb, it is just as if dead.' With her eyes closed she no longer reacts to the pin. She does not know whether her arm is up or on the bed; her muscular sense is gone. In order to exclude all idea of deception, I use Du Bois-Reymond's apparatus, varying the intensity of the current by alternately separating and approximating the coils of the induction apparatus. A rule graduated into centimetres indicates the degree of separation of the coils. Now I have already determined that the tingling caused by the electricity was perceived by this subject when the separation between the ends was five centimetres, and that the pain became unendurable, the patient drawing back the arm suddenly, when the separation was from three to two centimetres. These figures remained constant the same when her eyes were tightly closed, and I have perceived the several forces. By this means I determined that the pain is really perceived and not pretended."

This latter method of producing anesthesia by induction, and using the current, or her arm with the greatest current available at the greatest approximation of the coils. The result was the same as when the current was absolutely unknown."

Professor Bernheim was, I believe, the first to mention these phenomena of suggestion in the waking condition. In a recent number of the *Comptes Rendus de l'Académie de Sciences* it is stated: "They have since been confirmed by his disciples, Charpentier, Gasset, Dumontpallier, Richet,

and others; and in this country the same phenomenon was independently observed by Dr. Hammond."

It must be remembered, however, that these subjects were patients of Professor Bernheim, and had frequently been hypnotized by him before the experiments were tried. The cases have, however, a direct bearing upon the question before us, inasmuch as they show how slight a degree of hypnosis is necessary to enable the operator to produce a state of complete analgesia by suggestion; for it is obvious that a surgical operation of the most severe character could have been performed upon either of the patients mentioned. They are demonstrative that it is not necessary to induce a state of profound hypnotic lethargy in order to perform a painless surgical operation.

My second proposition, that "the hypnotic state can be induced without the aid of suggestion," will now be discussed. I have shown, in *The Law of Psychic Phenomena*, by quotations from the works of Dr. Braid, the father of modern scientific hypnotism and the originator of the term, that a state of profound hypnosis can be induced without the aid of suggestion. I shall not repeat my observations there made, but will attempt to show that Nature has provided a means for the induction of the hypnotic state in all cases where a surgical operation becomes a necessity.

In attempting to do this I shall rest content if I can make a *prima facie* case. I will endeavor to show that the law (of Nature) is on my side, and will then submit the case to a jury of experts consisting of the medical profession.

I will now invite attention to a few well-known facts the significance of which never seems to have been appreciated. In the work before mentioned I have drawn attention to the fact that when a person is in imminent and deadly peril he is instantly thrown into a state of anesthesia; or, in other words, into a partially hypnotic condition. It is the universal testimony of soldiers who have been in battle that the moment the fight commences all fear vanishes. It is also the universal testimony of those who have been wounded that a stricken soldier never feels a wound, and never knows he is wounded until he is disabled. Surgeon-General Hammond once remarked in my hearing: "A soldier never knows he is wounded unless he is stricken down; and, if his wound is mortal, he dies without pain and without regret." It seems to be a universal law that, when death is inevitable, the nearer it approaches the less it is feared; and that, when it comes, it brings no pain and no sorrow to its victim. The reason is obvious. The patient passes into a hypnotic state, or a condition cognate thereto; and he is in a complete state of analgesia, body and mind, if the term may be applied to the condition of exemption from mental suffering. The phenomenon is strikingly exhibited in cases of criminals who have been sentenced to be hanged. The moment all hope is lost and death is inevitable, they relapse into a state of profound indifference; and, when the fatal hour arrives, they march to their doom without fear, without emotion, and without regret. It is often said of them that they "exhibited great courage" and "died game." The truth is that Nature has done for them just what it does for

all living creatures—viz., it has, upon the approach of death, thrown them into that subjective or hypnotic condition which banishes pain and robs death of its terrors.

Volumes might be filled with illustrations of the fact, which is well known to the medical profession, that when death is imminent or inevitable Nature provides an anæsthetic in the hypnotic condition which insures an easy and painless, if not a pleasurable, passage to the other side. I say "hypnotic condition," because it possesses all the salient characteristics of that state, even to suggestibility, as is shown in the well-known fact that the hallucinations of the dying invariably correspond to the suggestions embraced in their lifelong beliefs.

I now desire to invite attention to another class of facts, which are equally well known, but the significance of which does not seem to have been appreciated. I will begin by citing one which almost any one of adult age can verify from experience. Did any one ever go to a dentist's office with a raging toothache and a firm resolution to have the offending member removed, without finding that all pain ceased as soon as the dentist's office was reached? If any one has had a different experience the fact has not been recorded. There may have been apparent exceptions to the rule, but it will be found that, in every case where the tooth did not cease to ache when the dentist's office was reached, it was because the patient had not fully made up his mind to part with the tooth without first making an effort to save it by some means less heroic than elimination. It may be safely said that, in all cases of toothache where extraction is resolved upon, the pain ceases when the patient approaches the operating chair. This phenomenon means something. Nature does not produce phenomena for fun, and it is the province of science to interpret this meaning on lines which will relieve Nature from the imputation of habitually perpetrating a joke on the victims of toothache. Here, then, is a state of local anæsthesia induced by a mental emotion. That emotion is produced by an approach to a surgical operation. The question is, What is the mental condition thus produced? Is it not a condition cognate to that of hypnotism, and identical with that induced by imminent and deadly peril? Certainly the phenomena are the same, and we have therefore a right to infer that the cause is the same. Nor does this phenomenon stand alone. It is more frequently observed than any other, because every one has had more or less tooth-ache. But it is true that in other surgical operations all pain ceases when the surgeon begins to display his instruments in presence of the patient. This being true, it may be asserted as a general proposition, provisionally at least, that the near approach to a surgical operation will always induce the hypnotic state on a degree sufficient to produce local anæsthesia in the part about to be operated on.

We have now seen how slight a degree of suggestion is required to render an individual amenable to control by suggestion. We have seen that the subject, even in the "waking condition," may be so completely susceptible to suggestion as to be without the slightest sensation of a tooth which is normally absolutely unbearable. It is also well known to every intelligent student of hypnotism that per-

sons in the hypnotic state are constantly amenable to control by suggestion. This, as has been remarked, is the fundamental law of hypnotism. It is a corollary of these propositions that, when a patient is about to undergo a surgical operation, he is invariably thrown into a partially hypnotic state, and that consequently all that is needed to insure a painless operation is a vigorous and an intelligent suggestion that he will feel no pain.

I can not but be aware that this is a conclusion so radically at variance with all that has been written on the subject that credulity will be taxed and proofs demanded. I will therefore present a few of the many facts which might be cited in support of my hypothesis. An eye-witness, well known to me to be entirely trustworthy, relates the following:

A boy in St. Louis had one of his legs crushed in a street-car accident, and amputation became necessary. A local hypnotist undertook to hypnotize the patient, but failed to produce anything approaching sleep. In making the attempt, however, he strongly suggested anæsthesia. What it became apparent that the boy could not be put to sleep, the surgeon proceeded with the operation without administering anæsthetics; and, to the surprise of every one present, the hypnotist included, the boy felt not the slightest pain, and conversed coolly and cheerfully during the whole operation.

In this case the boy knew nothing of hypnotism or its expected effect upon him, save that it would secure immunity from pain, and he believed that the mysterious passes were all that were required.

A prominent Washington physician relates the following, not of his own experience, but the facts of which he verified beyond doubt:

A country fiddler had a bad leg when it became necessary to amputate. The surgeon, after an unsuccessful year's treatment with an anæsthetic, advised he was about to amputate. The patient refused to take it, however, and insisted upon having his fiddle brought to him, saying: "Just give me my old fiddle. I have always felted out good away, and I can do it now." The fiddle was brought and he sang and strummed the whole operation, and declared that could sing a whole tune.

It will be observed that this case illustrates very clearly the fact that auto-suggestion is as potent a factor in hypnotism as suggestion by another.

Another case of auto-suggestion was related by the same physician:

The patient had long, agonizing hemorrhoids coming from the bottom of the Annapolis. The skill of the medical profession had been tried to this extent that it was about to amputate the hemorrhoid, and when it was found that repeated anæsthetics failed, it was proposed to administer chloroform, but the patient refused. "I can't stand it, no matter how they give it," said he, and I was determined to be successful, no matter what the result. The operation was performed with, and the patient declared that the anæsthetic was perfectly painless, and he was home without an operation.

A lady of my acquaintance, residing in St. Louis, presented the same kind of painful ailment, having had hemorrhoids drawn, or when having them bleed, by "pulling herself" manually, after the manner of Mrs. "Christine Scott."

motionless as a statue. This made us suspect that he was provided with some charm, and to resolve the doubt he was stripped as naked as his hand. Yet after a careful search nothing was found on him but a little piece of paper on which were the figures of the three kings, with these words on the other side: 'Beautiful star which delivered the Magi from Herod's persecution, deliver me from all torment.' This paper was stuffed in his left ear. Now, although the paper had been taken away from him, he still appeared insensible to the torture, because when it was applied he muttered words between his teeth which we could not hear, and as he persevered in his denials it was necessary to send him back to prison."

It will be obvious to the intelligent reader that the emotion of fear induced the hypnotic state, and that the talisman operated as a suggestion which produced a state of perfect analgesia.

That these facts have some significance goes without saying. That they point to some universal law of Nature is self evident. That that law, when once discovered, will be found to be for the highest good of mankind is a proposition sanctioned by the results of every discovery yet made in the realm of natural law.

Nature is ever kind to the victim of the inevitable. The truth of this proposition is exemplified in the universal immunity from suffering of all animate creatures during the process of dissolution. We have seen that the process by which this immunity is secured is by the spontaneous induction of the hypnotic condition at the approach of death. We have also seen that the same hypnotic condition is spontaneously induced when a surgical operation becomes inevitable. Have we not a right to infer that Nature has provided for the same immunity from suffering during a surgical operation, or during parturition, as it has for those who are called upon to undergo the process of dissolution? The conditions are the same; but the suggestion has been different, owing to our ignorance of the law. We have been taught that death "eases us of all (bodily) pain"; and it does. The suggestion in that case is on the side of immunity; and the result is that, no matter what form death may assume, the victim dies "without pain and without regret." On the other hand, our daily experience constitutes a suggestion that cutting and mutilation cause pain. That suggestion, in the absence of a contrary one, is carried over into the subjective condition which precedes and accompanies a surgical operation, and the patient suffers accordingly. Again, the same pronounced upon our grandmother's face operates as an ever present suggestion to the mother of Christendom that painful parturition is an ineluctable (inevitable) wherein, among other things, the inevitable suffering of a normal woman's life is attended with comparatively little pain or inconvenience. Now, it is not obvious that all we have to do is order to increase the suggestion conveyed by our ordinary natural experience. Is it not so, that already hypnotized patient is carried by nature to the effect that no pain will be felt during the operation? The patient is in that condition which renders all mankind amenable to control by suggestion; and the suggestion of

immunity from pain operates on the lines of Nature's least resistance.

One word as to the practical method of applying these principles. It is obvious that, in order to overcome the suggestion embraced in the daily normal experience of mankind, the counter suggestion should be made in some way that will strongly appeal to the imagination of the patient. It should be made strongly, vigorously, positively, but with due regard to the beliefs, the prejudices, and the general idiosyncrasies of the individual. As in other cases where suggestion is employed, success depends upon the manner in which it is enforced. Hypnotists will readily understand my meaning, and those who are not hypnotists can readily acquire the necessary information by consulting any modern standard work of the Nancy school. One thing, however, should never be lost sight of, and that is the necessity of impressing upon the mind of the patient the fact that a *profound hypnotic sleep is not an essential prerequisite to the successful employment of hypnotism as an anæsthetic in surgery.*

MR. LAWSON TAIT AND THE GERM THEORY OF DISEASE.

By WILLIAM R. PRYOR, M.D.

IN the December number of the *Buffalo Medical and Surgical Journal* is a communication from Mr. Lawson Tait, entitled *A Criticism of the Germ Theory of Disease*, based on the Baconian Method. My first conception of the paper was that it was intended as a huge joke, a travesty of the arguments of those with pre-antiseptic training. But a consideration of the eminence of the essayist convinces me that he is very much in earnest. Mr. Lawson Tait is serious. In my answer to him I shall pass over all that he says about the completeness of his work on the navel-string, about the book of Leviticus, hair parasites, Euclid, laceration of the perinaeum, and other entirely irrelevant matters. That my readers may follow me as well as fully appreciate Mr. Tait's remarkable effort, I will quote from him. "Let me remind you of the essence of inductive reasoning as Baconian men would have it: which has never been successfully evaded: 'The form which is sought can be detected only by a process of exclusion by which we find a phenomenon constantly present when the effect is present, absent whenever the effect is absent, and varying in degree with the effect.' Such a phenomenon would be the form of causation, the basis of the great effect or symptoms. According to this usual definition, is the cause necessary to a phenomenon? On the contrary! Mark carefully now. I therefore do not have an essentially fixed conception of this. But if it is proved on any Baconian basis we find that not only are the phenomena of dissipation not those of illness, but there is a constant, no weak, between them. Some separation of matter there are, but they are easily shut out by simple observation."

"Take the common human habit of perfectly waking, and the human habit of being perfectly asleep, and the

and see what will happen. The first remarkable fact to be found is that if the bodies are in Birmingham there will probably be no effect at all. If they are in Edinburgh, no effect, or very little, will be seen in the new town; whereas in the old town some commotion will result, and there will be about a hundred cases of typhus. These will be distributed in various centers with mathematical proportion, and probably no two cases will be exactly alike. Clearly, then, according to Bacon, the provocative cause lies not in the germs."

Mr. Tait's views of the causation of disease are well shown in the following quotation: "It is probably the germ of some very ordinary fungus, sporting with deadly growth from the pabulum afforded by the crowd—a suggestion made to me by the late Charles Darwin. At any rate, in this case the fulfillment of Bacon's canon is complete. The phenomenon, a population above a certain density, is always present when the effect, typhus fever, is present. It is universally absent when typhus fever is absent; and the effect, typhus, varies in degree with the degree of overcrowding. The phenomenon overcrowding is, therefore, the form in question, 'the cause of the given fact or attribute.' Littlejohn's facts and figures prove the law of the appearance and existence of typhus, the law of its variation, and they have established the fact of its extinction. You may as well establish a germ theory for this awful disease as for a leg of cold mutton. Not only is the argument from ætiology one of the most complete and perfect kind, but it is supported to a most remarkable degree by many clinical facts. Thus Russell, Murchison, Christison, and Wilson all agree upon certain facts (and no one has even disputed them) that typhus arises *de novo* upon appropriate provocation. Its germ is, therefore, certain to be a sport, forced by the conditions so well described by Howard, and we should expect that the conditions of sport being removed it would speedily lose its temporary malignity and return to its ordinary and probably quite harmless form. This is entirely supported by the fact insisted upon by all authors, that the contagion of typhus does not carry far, and is completely and speedily killed by cleanliness and an abundant air supply. Murchison lays special stress on the small risk to attendants on the fever-stricken if these conditions are fulfilled. All these facts are wholly contradictory of a 'germ theory'; for even if a 'germ theory' were accepted in this case we should immediately point out that the germ was only a temporary existence, and that we have an already well-ascertained cause of its existence. It, therefore, must disappear from the argument, save as a mere *modus operandi*."

"The phenomenon, a population above a certain density, is not 'always present when the effect, typhus fever, is present.' It is only the density of population increases the possibility of spreading the disease, and in direct ratio with the amount of overcrowding exposed. But typhus is not a disease of the crowded, and in direct ratio to that fact the phenomenon Mr. Tait insists upon is not necessarily present. Furthermore, a population exists without the presence of typhus, typhus fever, and with a *de novo* provocation it is a *de novo* origin. Yet it is never

found so to arise. That something can not spring from nothing, we accept as the simplest truism. That the germs we see now typical of certain diseases once had a beginning in some other form, we must believe. Microscopic life, as well as that of the *vertebrata*, obeys the inevitable law of evolution. When we seek the very first incentive to life we approach the unknowable, and discuss infinity, which finite minds can not grasp. To accept the *de novo* theory of the origin of disease is merely to believe that germs cause themselves. Whatever springs from something else does not arise *de novo*."

Finally, the degree of the "effect typhus" does not vary with the "degree of overcrowding," but rather is in inverse ratio to the germicidal (cleansing) methods adopted to stamp it out.

When the effect is present the alleged cause is not always present; when the alleged cause is present the effect is not always present. *Ergo*, overcrowding is not the cause of typhus, and the question still remains, What is the cause of typhus fever?

The improvement lies in our ability to keep erysipelas and other pathogenic germs from the wounds we make, and we accomplish this even in the presence of overcrowding. The phenomenon overcrowding is present and the effect erysipelas absent. To say that overcrowding produces it is to affirm nothing. The question remains, What is the agent in overcrowding which produces it?

He speaks of Lister's discovery in these terms:

"He filled a big hole in a man's heel with protected blood-clot; he kept out the common or garden germs and that blood-clot got organized and filled up the hole. Of course, it must not be forgotten that all these phenomena were known in domestic science for centuries before, but their surgical importance was not recognized, and certainly Lister's discovery was new in so far that it referred to blood clot not covered by skin or other living tissue, but directly exposed to air—air altered and deprived of its dangerous elements. Then comes Hamilton, who showed that material actually dead—dead beyond all question—could be so prepared as to adapt itself to the tissue of the feeblest kind, granulation cells, could be used by them as a temporary endoskeletal arrangement and removed by them by the common process of absorption when they were no longer in need of it."

One more quotation, for it bears directly upon his view of the causation of disease: "As I look back at my early experience of surgery my wonder is that I ever stuck to it. In Edinburgh, during my pupilage from 1861 to 1866, I saw some thirty ovarian and other abdominal tumors removed without one single recovery, and I left the land of my birth with one fully made resolution, that I would never open an abdomen. In Edinburgh, if I saw an amputation of the thigh in the Old Infirmary on a Wednesday, there was a strong probability that in the following week I would see the bared bone sticking up through the anterior flap. Erysipelas, indeed, was rampant. I have never seen a case of erysipelas in my own practice, not one. In what lies the improvement? The answer is simple: It

lies in separation of patients: plenty of cubic space and fresh air."

He ends his address in the following characterization of the germ theory: "A theory which is no theory at all, but a phantasm, a system which has been proved an inconsistency and a broken reed—a thing which yields at every blast either to scholastic logic or to ad hoc experimentation."

Before proceeding further let me disclaim any intention of appearing as the champion of the germ theory. I am combating as an individual who has accepted that theory and whose work is governed by it the arguments set forth by Mr. Tait. Applied to our science, the Baconian method demands that we must take a certain germ from a disease and produce the same disease with it in a healthy individual. If the control experiment has accomplished this with but one germ so acquired, the experimental method is applied so far as that one particular germ is concerned. And, although morbid states may be observed in which we have as yet been unable to isolate the identical pathogenic germs which cause them, if the control method is observed with them by taking the morbid product of the diseases and producing identical conditions in other healthy individuals never in contact with those from whom the products were procured, we may justly infer that there are unknown germs which bring about the result. And if one by one these inferences regarding different diseases are replaced by the positively demonstrated germ obtained from each disease and isolated and alone producing the same disease in a healthy individual, not only is the case again proved, but the inferences regarding all other diseased states are strengthened.

It is not essential to the proper application of the inductive method that it be possible always to find the germ or that the effect be in proportion to the amount of germ life present. Such a method of reasoning might hold good with the association of inanimate chemical agents, but not with living germs and living tissues. The grosser clinical features of disease upon which Mr. Tait so much relies in his refutation of the germ theory are still more variable. And it would be as reasonable to expect the invariable presence of a typical germ as to seek the invariable presence of any one symptom or etiological factor, such as overcrowding. To deny the existence of a disease because we can not find that germ which has been isolated at other times from the same condition, or to deny its existing the presence of a disease whenever a certain symptom of it is absent. Variation in bacterial life must be accepted as well as in the phenomena which diseases present.

Take the gonorrhoea, for instance. Flax taken from the mucus of a gonorrhoea is isolated and found to contain the gonococcus. Furthermore, cultures are made of the mucus and these pure cultures placed upon the healthy medium have produced a gonorrhoeal discharge containing the gonococcus identical with that first obtained and with that bred by cultivation. The next source of gonorrhoea is then seen to be the gonococcus. Thus it is shown our position to find that pathogenic gonorrhoea proceeds by

sterile, or that the gonococcus fails to cause gonorrhoea in B's urethra while it succeeds with A's? Pathogenic germs, as well as the gross bodies of men, die. That the contents of a pus tube are sterile simply means that the causative cocci are dead or so modified that our usual methods fail to find them. That this method is not influenced by the presence of the gonococcus we believe to be owing to the local tissue resistance; the gonococci die and do not multiply, just as they do under any other unpropitious circumstances. The common clinical fact is doubtless known to Mr. Tait that a number of men will cohabit with an infected prostitute and several escape infection. Their immunity does not prove that those who have clap have not got it, or that the infected woman did not cause it. Accepting Mr. Tait's suggestion to apply the Baconian method, let us enumerate some of the germs to which it has been successfully applied: Anthrax, tuberculosis, glanders, Asiatic cholera. But why multiply examples? Certain it is that the inductive method has been carried out with many of the pyogenic cocci other than the gonococcus. Current literature as well as clinical experience furnishes us with irrefutable evidence regarding many of them.

In what he says about decomposition I do not agree with Mr. Tait, except that it is irrelevant. Then what has all that he says about decomposition to do with the germ theory of disease? That we have in many instances found germs, which isolated germs will cause diseases identical with those from which they were procured, and that the diseases are absent when the germs are absent, is beyond question. In all these diseases we must admit that we do not invariably find the particular germs causing them, but we find no other germs constantly present which can cause these diseases. Still the germ is said to be present in some, and in others it is so constant an accompaniment that the failures to find it may be ascribed to some defect of observation. We have, then, certain diseases in which certain germs are always found and will always produce the diseases in another, such as anthrax. There is another group in which the germ is so constantly present and will so rarely fail to cause the disease that we are forced to accept it as the causative germ of that disease, such as gonorrhoea. In a third class of diseases we have found no typical and constant germ, but in these we can multiply the diseases by subjecting the healthy to material obtained from the sick and applied at various intervals to the contents of the pustules from variola. Even in this latter class we apply a control experiment in a practical way, but one which avoids the shortcomings of the experimental method. We apply the material from immunity against certain diseases recently recovered from.

More than this we can artificially produce an artificial disease condition by inoculating with a virulent germ tissue to cause a certain disease, and then remove from the natural resources from further attack of the germ. And before taking from the natural source and again will self-produce the continuing disease characterized by the presence of those germs which were isolated in the culture. The practical result of germ science is much

Mr. Tait scoffs is that we are enabled to take these fluids from the immune animal and by them successfully expel from the human system the identical germs which were originally used upon the animal and which were procured from a human being infected by them.

Were not the "form sought" what we deem it to be, such a result could never be brought about. If the diphtheria germ is found in diphtheria, if with it we inoculate an animal, if with this immune animal's serum we expel from a child's system the diphtheria germs which infect it, surely the case is proved, and by a test far more crucial than that demanded by the Baconian method of reasoning.

Mr. Tait contrasts with his own the ill results of men who are extreme in the use of anti-septics. He challenges Lister to compare results with him, and criticises his clinic for abandoning antiseptic methods "for the adoption of 'aseptic surgery,' the perfect cleanliness which I have been preaching for years."

The few quotations I have made from this paper suffice to show the state of the author's mind. The battles which have been fought in the march from the old empiricism to the modern asepisism furnish him with much material for his scornful argument. In the evolution of our science he finds amusement. The men who have given us our precious facts, proved even by the Baconian method, are to him but misguided or ignorant.

Surgery, unlike astronomy, is not yet a fixed science. As our premises change, so must our conclusions. This but attends all advancement. And, although Joseph Lister's first work is now abandoned, yet must we consider it as the dawn of our new surgery. Lucky indeed will Mr. Tait be if his life's work gains the plaudits of his fellows as Lister's has.

Whereas there may be much in which we have been mistaken, and many our mistakes, certainly the germ theory of disease has been proved beyond a doubt in all the essentials to proper conclusions. We have not discovered the germs of all diseases, but we have found some. The facts discovered in our experiments with these have given us the perfect cleanliness we employ, and have taught us how to treat diseased conditions and at the same time conserve natural forces. Antiseptics we have largely abandoned, not because Mr. Tait told us to do so, but because we have learned the art of protection. I unhesitatingly tell Mr. Tait that the improvement lies not in the separation of patients, but in the making of clean wounds and protecting them from germs and chemical irritants. That we know how to do this is the direct result of the work of Lister. The germ theory of disease has not "proved an inconsistency in the making of clean wounds and protecting them from germs and chemical irritants"; but it is a theory which is logically proved, which gains strength with every fact apparently and the sure fulfille of which but prove some fact already accepted. The opponents of the germ theory could not have found a colder, silder, more accurate description than Mr. Tait's. Truly has the fact that germ theory has not been tried, and found to be the discharge!

ON THE USE OF EXTRACT OF LIVER, GLYCERIN, AND COD-LIVER OIL IN THE TREATMENT OF PHTHISIS PULMONALIS.

By JOHN F. RUSSELL, M.D.,
VISITING PHYSICIAN, COLORED HOME AND HOSPITAL, NEW YORK.

THE following is a report of the use of glycerin extract of liver mixed with cod-liver oil in the treatment of phthisis pulmonalis:

It was believed that extract of liver would aid digestion, particularly of fat, and in that way improve nutrition. Nothing was hoped for other than such results as follow improved nutrition and assimilation. There was no thought of making an impression upon the lung process except such as would flow indirectly from the improvements mentioned. The main object was to increase weight.

Only patients in an advanced stage of the disease were selected.

It is well known that consumptives gain or lose flesh in the most extraordinary way, in any and all stages, under the best or worst surroundings. As a rule, however, these sufferers lose steadily in the last stages. It was therefore thought safest for our purpose to select cases that showed extensive lung lesions.

The object of the experiments, then, was to determine if a glycerin extract of liver mixed with cod-liver oil and given after each meal would improve the nutrition in advanced phthisis pulmonalis; and, if there were gain, to further determine if this result was due to (1) the extract of liver or (2) to the glycerin which the extract contained. No attention was to be given to subjective symptoms, but an accurate record was to be kept of height, weight, temperature, pulse, and amount and character of urine.

The number of cases is too few and the length of time covered too short to make these experiments convincing. The reason for these shortcomings is that in a general hospital it is difficult to gather a large number of cases of the same disease at a given time, and more difficult still if one limits the cases to a certain stage of the disease, as was done in this instance. A further drawback was the necessity for beginning and ending the investigation within a specified time in order to gain proper assistance in collecting and recording facts. I feel that their chief value, if they have value, lies in confirming the known fact that glycerin increases general nutrition and weight. In my experience this power is augmented in phthisis by combining it with oil, not necessarily cod-liver oil.

The extract was prepared in the usual aseptic manner, everything used being thoroughly sterilized. It is not important to describe the process here. The livers were collected at the slaughterhouse from lambs the moment they were killed, and mixed with glycerin within an hour. The glycerin contained ten per cent. of water. After cutting away all fat and fibrous matter the livers were chopped to a fine pulp and mixed in a flask with glycerin in the proportion of grain for drop. This mixture was kept for three days, shaken thoroughly three or four times a day,

then filtered, corked with cotton, and put away in the dark until used. The dose—half a drachm, increased to one drachm—was fixed upon after long experiment as giving the best results. The extract and oil were kept in separate bottles and mixed at the time of administration.

The experiments lasted from June 20th to September 5th, and were divided into three periods:

1. From June 20th to July 10th the patients were given cod-liver oil alone, one drachm three times a day.

2. From July 10th to August 14th the patients were given extract of liver, half a drachm; cod liver, oil, one drachm, until August 1st. After August 1st, extract, one drachm; oil, half an ounce.

3. From August 14th to September 5th the patients were given glycerin, half a drachm; cod liver oil, half an ounce.

The weights were taken with great care the same hour of the same days of each week, the patient being naked, the one female excepted. She was allowed to wear a light garment, always the same. Fairbanks' scales were used.

Nine cases, all colored, were selected from the service at the Colored Home and Hospital. Of these, five died before the completion of the experiments. Dr. George A. Tuttle, the pathologist of the hospital, examined the sputa and found tubercle bacilli in large numbers in all the cases.

The following is a list of the cases selected:

Table of Cases Selected.

	Age	Height, inches	Weight, pounds	Normal weight*	Notes	Died
W . . .	36	66½	106½	132	Hydropneumothorax, left side, indurated, size of child's head, 29. from left apex; cavity, right apex.	June 29.
G	30	64	94½	125	Cavity, each apex.	July 1.
T	15	60	98	120	Cavity, right apex, anteriorly July and posteriorly; induration, 18. of the right lung, indurated, from apex only.	July 1.
S	21	68	110	100	Consolidation and induration, July left lung, anteriorly and post. 21. (stuffed) induration of right apex; cavity present.	July 21.
Jos. J. . .	22	68	103	100	Cavity, each apex; lungs in Ave. flattened throughout except 14. lower right lobe. Chronic chronic diarrhoea and chronic peritonitis.	Aug. 14.
B	19	63	100	116	Cavity, left apex; induration of upper lobe of left.	Aug. 14.
D	43	60	107½	142	Cavity, upper part; induration of left apex.	Aug. 14.
J. H. J. .	29	63	96½	115	Cavity, lower part; induration, throughout, upper lobe.	Aug. 14.
F. W. . .	43	63	100	131	Severe old phthisis; much induration; consolidation in right lower lobe; consolidation at right apex; much pyrexia.	Aug. 14.

* Normal weight for each sex, according to the following table, was known and twenty pounds for every inch of the height was estimated as normal weight.

This table shows the daily changes in weight of the cases. The first column shows from which to three patients. Of these four two died of pneumonia (W. and J. H. J.). F. W. survived the longest, the last patient seen & reported pneumonia having the right lower lobe consolidated as a phthisis of the same side. From this the following

Six months later she developed a pleurisy on the left side, which began in the mammary and neighboring axillary regions and gradually ascending, embraced the whole upper part of the lung. From this she never recovered, but steadily declined until tubercle bacilli appeared in the sputum and the lung showed unmistakable signs of involvement.

J. H. J. had, in addition to his extensive lung lesion, a tubercular laryngitis.

The special feature of these two cases was the distressing cough, which made their nights hideous from loss of sleep and tiresome efforts.

Such complications, the severe pleurisy and the laryngitis, by provoking incessant cough and interfering with rest and the retention of food, it is fair to assume, made these patients less likely to gain. In fact, their small loss, under the circumstances, may imply greater gain than the increase of the two others.

E. W. was given codeine to relieve cough. The others received no medicine except extract of liver, glycerin, and oil.

The diet at the Colored Home and Hospital is the ordinary almshouse diet—no roast meats and few green vegetables. Nothing different was given the patients here considered. They received what they and all the other patients in the institution had always received and nothing more.

The tables of weights for the three periods are here given:

Table of Weights from June 20th to July 10th. Cod-liver Oil.

	June 20.	June 26.	June 30.	July 3.	July 7.	July 10.	Average gain, per cent.
E. W.		100	98½	100	99½	97½	99.50
D.	172½	170½	131½	132	131½	130½	131.78
B	119	120	118	117	116½	115½	117.04
J. H. J.	96½	96½	92½	91	89	86	92.16

Table of Weights from July 10th to Aug. 14th. Extract of Liver and Cod-liver Oil.

	July 14.	July 18.	July 24.	July 28.	Aug. 1.	Aug. 5.	Aug. 11.	Aug. 14.	Average gain, per cent.
E. W.	98½	100	99½	99½	98½	100½	99	99½	99.80
D.	169½	169½	114½	114½	113½	113½	114½	114½	114.14
B	111½	111½	114½	114½	114½	114½	114½	114½	114.14
J. H. J.	91½	91	90½	90½	91½	91	91½	91½	91.14

Table of Weights from Aug. 14th to Sept. 5th. Glycerin and Cod-liver Oil.

	Aug. 14.	Aug. 18.	Aug. 24.	Aug. 28.	Sept. 1.	Sept. 5.	Average weight.
E. W.	99½	98½	99½	99	99½	99½	99.50
D.	169½	169½	169½	169½	169½	169½	169.50
B	114½	114½	114½	114½	114½	114½	114.50
J. H. J.	91½	91	90½	90½	91½	91½	91.14

Table showing Average Weights of the Cases Studied.

	First period, June 20th to July 10th. Cod-liver Oil.	Second period, July 10th to Aug. 14th. Extract of Liver and Cod-liver Oil.	Third period, Aug. 14th to Sept. 5th. Glycerin and Cod-liver Oil.
E. W.	99.50	99.80	99.50
D.	131.78	114.14	169.50
B	117.04	114.14	114.50
J. H. J.	92.16	91.14	91.14

The charts showing temperature, pulse, daily quantity of urine, and the specific gravity are next given.

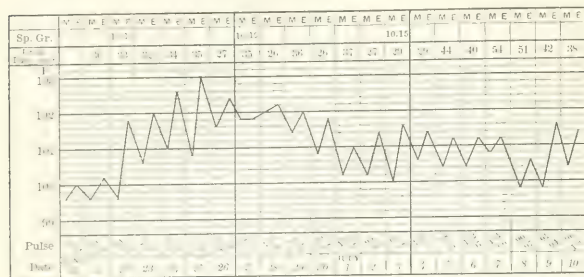


Chart showing temperature, pulse, daily quantity of urine, and specific gravity. First period.

These charts are composite. That is, they are the liver is only valuable from the glycerin therein contained. The latter may throw some light upon the im-

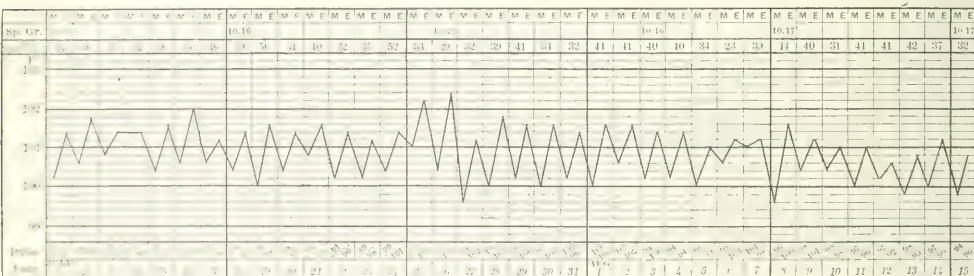


Chart showing temperature, pulse, daily quantity of urine, and specific gravity. Second period.

taken in the rectum at the same hour, twelve hours apart, | proved nutrition noticed in patients who take the various animal extracts.

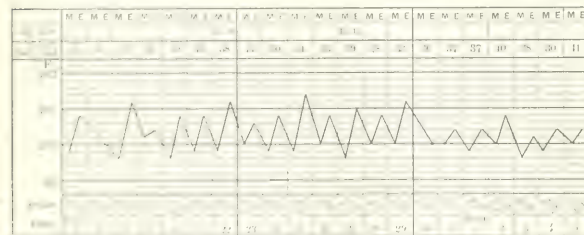


Chart showing temperature, pulse, daily quantity of urine, and specific gravity. Third period.

It will be seen that the temperature is worst during the first period, better during the second, and best in the third. It is possible that the sudden withdrawal of the opium, which all of which contained opium in some form, may have caused, from the increase of cough, the greater improvement in the last few days. The chart for the third period shows a further improvement and a general expansion of the chest and weight.

The patient's pulse, temperature, chemistry, and electrolytic balance were all excellent, excepting an occasional

cloud of albumin or a cast now and then, nothing abnormal found.

Neither albumin, sugar, nor kidney elements were present constantly.

This was done more particularly to determine if glycerin long continued caused irritation of the kidneys; also to find if the large amount of liver sugar taken in the extract was altered in the body or discharged by the kidneys unchanged.

No attempt was made to estimate the quantity of urea. Under the circumstances, it was thought that the wide range compatible with health would make deductions unreliable.

The results of this investigation indicate that glycerin and oil mixed improve nutrition in phthisis pulmonalis; that the extract of

As has before been intimated, in my experience glycerin alone, without oil, fails to increase weight in this disease.

It is but just to add that these experiments were the outcome of, and the results confirm, a much larger experience—an experience that unfortunately can not be given in this paper because from lack of assistance the facts observed were not recorded.

NOTE, November 26, 1894.—J. H. J. and B. died in September, the former from exhaustion, the latter from the sudden rupture of a cavity into the pleural sac. D. weighs 141½ pounds; E. W. weighs 101½ pounds.

24 WEST ELEVENTH STREET.

A Preparation said to be Worthless.—Dr. D. A. MacLish, of West Bay City, Mich., writes that many of the physicians of Bay City have tried a preparation called "Chyld's" solution for making cold splints, and found it worthless; hence they wish to warn the medical profession in general to be on their guard against the vendor.

The Paris Academy of Medicine.—Dr. Lucas-Championniere has been elected a member of the academy.

THE DIFFERENTIAL DIAGNOSIS OF TRAUMATIC INTRACRANIAL LESIONS.

By CHARLES PHELPS, M.D.,

SURGEON TO BELLEVUE AND ST. VINCENT'S HOSPITALS;
CONSULTING SURGEON TO GOVERNMENT HOSPITAL.

(Continued from page 767.)

GENERAL DIAGNOSIS.

BEFORE attempting to isolate the several forms of encephalic injury, I shall recur to two points in their general diagnosis which have been, at least provisionally, established by the analysis of my first series of cases. I refer to the pathognomonic value of temperature in the symptomatology of head injuries as a class, and to the recognition of cranial fracture. I shall not enter at length into the reconsideration of either subject, since the relation between symptoms and demonstrated lesions previously determined is found to still subsist, and the more recent observations have but confirmed the opinions the study of the elder series seemed to warrant. The additional cases have in fact not only substantiated but strengthened the propositions which I formulated in the original instance; this will be sufficiently evident by a simple reference to their histories as presented. I shall consider more specifically only the two points in general diagnosis which I have designated.

PRIMARY SUBNORMAL TEMPERATURE.

In all the cases of the first series but two the temperature was elevated at the time of first observation. In the present series, which, like the first, includes recovering as well as fatal cases, the instances of primary subnormal temperature have chanced to be more numerous, but in all which survived primary shock subsequent elevation of temperature was equally noted.

In more than seventy-five per cent. of the forty or more cases of the later series in which the earliest known temperature was subnormal, the patient still suffered from evident shock or alcoholic intoxication. It is not inconceivable or improbable that in them a characteristic symptom of shock or of alcoholic poison should have taken precedence of others produced by traumatism. In the cases remaining, where no other suggestion of shock or of alcoholism is to be derived from the examination of symptoms, the solution of the problem is probably the same. Presuming that the earliest manifestations of injury—those exhibited before admission—are most difficult to learn, it may well happen that depression of temperature, often the last surviving indication of shock, is all that remains when the first record of the case comes to be made. Three of the residual cases were complicated by severe external injury; in many others there was free intracranial hemorrhage, as determined in the majority by necropsy, examination, and in the others by the escape of blood during life from ear, nose, or mouth. In one case, in which there was no external hemorrhage, the general conditions indicated its existence within the cranial cavity. In all these instances the occurrence of subnormal or arrested shock is not only the rational but more than probable explanation of an otherwise inexplicable early depression of temperature,

but whatever may be thought of these exceptional and temporary early conditions, all such cases very soon fall into line and conform to what seems to be an established law—that elevation of temperature is the unfailing manifestation of traumatic lesions within the cranium.

The character of the pulse and respiration in the exceptional instances in which subnormal temperature was observed has not been usually suggestive of general shock; in a few cases the one was notably frequent or the other markedly accelerated; in general there was little if any variation from the normal standard. This requires for explanation but another application of the suggested law of precedence in symptomatology; it may happen that the pulse and respiration reflect for a time the general condition of shock, but it is more frequently the temperature alone which in the presence of intracranial injury is dominated by the original impression made upon the sympathetic nervous system. In all cases, if the patient survives a certain very limited period, temperature, pulse, and respiration, like all other symptoms, are dependent upon the special injury which has been suffered, and this is ordinarily the fact at the earliest opportunity afforded for examination. It is sufficient to indicate this law of preference without attempting to fathom the conditions upon which it rests.

I have previously insisted in this relation of temperature to general diagnosis upon the importance of distinguishing alcoholic coma from cerebral trauma. I have no less strenuously asserted the facility, the almost absolute certainty, with which this can be accomplished. I believe the elevation of temperature in the one, and its depression in the other, have been so thoroughly established as to demonstrate the sufficiency of temperature alone, without the existence of external injury or positive general symptoms, in almost any case in which question may arise. It is fortunate that the occasional early depressions of temperature in intracranial injury are likely to be associated with such general conditions as have little room for doubt in diagnosis. I have no reason to revert to a subject so simple in itself, except in the interest of humanity and in protest of the shocking abuses which still persist in this regard in the accident service of the city. Negligence or incompetence still figures in the early history of too many of the serious cranial and intracranial injuries which have at a later period come under my observation. There may be a fair presumption that a man found unconscious in the street, or delirious in a police station, is simply drunk and devoid of mental interest; but it is not so generally well understood as it is worthy of to be carefully examined, and that a patient with fractured skull and lacerated brain, whether or not in alcoholic condition, has been given admission to an emergency hospital, and transferred to an asylum for the insane, or even sent to the street to be cared for by the police, or to the workhouse, in exceptional instances. It may be in some patients a defect in professional training, when hospital admission is properly demanded as indicated in the discharge of a patient with skull fracture. It is well, therefore, to discuss the

not public teachers to assume an office, and to direct attention to such default if for no better purpose than to avert public scandal.

FRACTURES OF THE CRANIUM.

The diagnosis of fractured skull is not difficult if the case be subjected to sufficiently careful examination. This is evident in some degree from anatomical considerations, and is illustrated in my first series of cases. Fractures of the vertex can always be discovered by tactile or visual sense, since incision is without danger or subsequent inconvenience to the patient, when doubt exists which it seems important to resolve. Fractures of the base in a large proportion of cases traverse some part of the bone which permits the escape of blood from the ear, nose, or mouth, or into the subconjunctival or subcutaneous cellular tissue. In fifty per cent. of the eighty-seven necropsies in both series in which fracture of the base existed there had been some form of external hæmorrhage during life; in more than seventy-five per cent. of the seventy-eight cases which recovered, or in which necropsy was impracticable, there had also been some characteristic hæmorrhage, so that in 62.5 per cent. of the total number diagnosis could be made largely from this single symptom. Two of the remaining sixty cases presented an equally characteristic serous discharge, and many others had been recognized by tracing fissures from the vertex downward into the base in the course of operation. There are left scarcely more than twenty cases in which this fracture was unknown till disclosed at necropsy, and of these, several were brought under observation only after the lapse of one or more days—too late to ascertain whether or not hæmorrhage, usually a transient symptom, had occurred. In this residuum of cases the fracture very frequently extended into the middle or posterior fossa without reaching the petrous portion, and sometimes into that bone without involving any part of the auditory passages; fracture through the anterior or middle fossa in some instances failed to so implicate the ethmoid or sphenoid as to establish communication with the nose or mouth; in the anterior fossa the thin orbital bones were occasionally fissured without causing either orbital or ocular hæmorrhage, visible or concealed. Yet, with all these possibilities of failure of recognition as a symptom, its absence altogether, its lack of means of exit, the neglect of its early observation, external hæmorrhage was noted in nearly four out of five of the whole large number of cases which I have recorded.

I do not think there is the serious difficulty which has been suggested in determining whether such hæmorrhage is the result of fracture. The local examination of ear, nose, or mouth is sufficient to eliminate the most probable source of error. Contusions of the face in the ophthalmic region may sometimes make orbital or ocular hæmorrhage at the outset so common, and bilateral epistaxis has once been taken to signify the interpretation of a nasal hæmorrhage; but it is usually possible in such instances to give the symptoms a proper interpretation. I believe it may be possible to effectually pathognomonic. I have only once seen epistaxis arising from the cut to nasal from a wound of the petrous portion.

An occasional escape of brain substance through a cranial fracture requires no consideration. The more frequent instance of injury of a cranial nerve from a fracture passing through its bony canal may be diagnostic if it be practicable to fairly determine that functional disturbance or abeyance does not depend upon lesion within the intracranial cavity. I have recorded in the first series an instance of facial paralysis which was found upon necropsy to have been occasioned by fracture and hæmorrhage into the aquæductus Fallopii, and I have had reason in more recent recovering cases to refer the same symptom to similar osseous lesion. It is well known that fracture through an anterior fossa often involves the optic foramen. I have recorded the history of three cases, in which the patient survived, where the optic nerve was thus implicated and suffered subsequent atrophy with immediate and permanent loss of vision. Dr. P. A. Callan has reported nine cases. I have no doubt, therefore, that valuable diagnostic information may be afforded by nerve disturbance mechanically produced.

There remains a symptom which I believe to point to fracture, and to which I have previously adverted, in the existence of acute localized pain at the seat of injury. I have since observed it in a number of cases in which this lesion seemed otherwise probable; these often resulted in recovery, and, as the indications of intracranial complication were slight, the symptom was unobscured. I quote an illustrative case which occurred in my service at St. Vincent's Hospital:

A young woman fell from a third-story window to the pavement below and was admitted at once, delirious, with hæmatoma of the left frontal region extending over the eye, and with slight subconjunctival hæmorrhage. She had epistaxis, which was repeated the next day, and from which she said she had previously suffered; no fracture was discovered by incision; severe frontal headache, confined to the site of the hæmatoma, continued for three days; the mind was clear; the wound of incision healed at once; the temperature on admission was 101.4° , rose gradually to 103° on the third day, and then declined to 99° on the ninth day; the pulse on admission was 68, and on the sixth day 120.

The degree and course of temperature in this case indicated injury of the brain, and while neither the epistaxis nor the ocular hæmorrhage could be positively attributed to fracture, the severity of the blow, amount of local injury, and coexistence of brain lesion, gave to my mind a certain diagnostic importance to a severe localized pain which was certainly not characteristic of simple contusion. I shall have occasion to detail in another connection some fatal cases in which the value of this symptom was incidentally verified.

The symptoms usually ascribed to fracture—as loss of consciousness, pupillary change, and others—are really those of encephalic complication, and have only a possible indirect relation to cranial injury.

In assuming that fractures are themselves unimportant, except for their complications, immediate or remote, I have not depreciated the importance of their diagnosis. Fractures of the vault induce complications, which are relieved

only after recognition and treatment of the fracture itself. Laceration of the brain, wounds of the sinuses, hemorrhages, and later psychical disorders caused by fragments of bone depressed, can be treated only after detection of the primary lesion. Basic fractures are less likely to require or admit direct interference; but their appreciation is still of moment. The knowledge that fracture exists may greatly help to confirm the diagnosis of a deeper seated injury, and greater certainty in regard to the existence and nature of morbid conditions can not fail to increase the possibilities of successful treatment. The curative management of intracranial lesions is still so far unsettled that aid from any quarter, in giving it firmer basis, is far from unimportant.

DIFFERENTIAL DIAGNOSIS.

When the transition is made from general to special diagnosis, and beyond the simple recognition of fracture to the differentiation of intracranial injuries, difficulties increase, and these, I have found, are to be encountered and surmounted, if at all, with little aid from other than personal observations. The literature of the subject, aside from the contributions of Prescott Hewitt and von Bergmann, is singularly unsatisfactory, and the most recent surgical writers even are hopelessly confused in their descriptions of these obscure forms of injury. There has been no lack of tabulated collections of cases, but they have been disjointed and heterogeneous, incomplete in historical detail, and barren of result for any purpose of useful generalization. They have presented a jumble of symptoms, lesions, and pathic relations, at once perplexing and discouraging. I limit criticism to methods of culture which have obtained in the field of traumatism, and have no intent to disparage the work which has been done in other departments of neuro-pathology.

I have no hesitation in ascribing this want of precision primarily to an erroneous conception of the structural alterations which such traumatisms produce, and to a consequent failure to either accurately define the resultant morbid conditions or to systematize the symptoms which they present. Following an imperfect apprehension of the nature and effects of structural lesions, intracranial injuries have been considered largely in the light of theoretical preconceptions. Mistaken views of histopathology and symptomatology, strengthened by time and tacit acceptance, or have been formally discarded, only to be again practically rehabilitated. Recognition is still given to a hypothetical disorder which is without pathological foundation. Symptoms are still grouped under a comprehensive designation, which result from entirely different conditions, and which present as many points of contrast as of similarity. Fact has been subordinated to fancy in order to construct a system which has foundation in every particular, a comprehensive representation of the entire cerebral contents has been assumed which has no basis of truth. Concussion, compression, and encephalitis are terms which stand in place in the scientific or surgical literature. I have hitherto considered the nature of concussion, and that most comprehensive and encephalitis hereafter.

In a previous paper, of which this is a continuation, and to which I am so often compelled to refer, I detailed the traumatic lesions which were revealed in a considerable number of necropsic examinations, and made them the basis of classification of the morbid conditions which they had occasioned. In an even larger number of necropsies observed since that time parallel conditions have been found to exist. As each form of lesion is attended by characteristic symptoms, and as no evidence is adduced that symptoms occur independent of anatomical alteration, it is logical and, I think, essential to recognize groups of symptoms under the name of their pathogenic lesion. The attempt to classify traumatic or other diseases by their outward manifestations is arbitrary, misleading, unphilosophical, and contrary to what has come to be accepted as the true principle of nosography. It is beyond my province to insist upon the proper basis of nosology, which has been so learnedly demonstrated and so felicitously formulated by my distinguished colleague, Dr. J. W. S. Gouley.*

These lesions, reaffirmed in brief, are: (1) Intracranial hemorrhages from injury of the bone, brain, or membranes; (2) arachnitis, from injury of the arachnoid membrane and pia mater; (3) lacerations and contusions of the brain substance; to which may be added (4) pyogenic parenchymatous inflammation.

I omit reference to disorganizing injuries in which the brain and its membranes are alike involved; they are patent and have no relation to classification. There is another lesion—thrombosis of the dural sinuses, which I have been unable to connect with symptoms.

The prevalence of errors in pathology and of faulty generalizations in symptomatology, together with the inherent force which they derive from prescription, may be reckoned extrinsic causes of diagnostic uncertainty. Some of the sources of confusion and failure which I indicated in a previous study of head injuries may be regarded as intrinsic. In the second class the multiplication of lesions in the same case and the apparent identity of symptoms from dissimilar causes may be counted as most efficient. I believe the "Ariadnean thread" should be sought in the study of those cases in which the lesion is either simple or in which one out of many is primary and of paramount importance. The clew once gained, it ought to be possible to follow it through the more complicated cases.

INTRACRANIAL LESIONS.

Intracranial lesions which have been usually considered are (1) cerebral, (2) meningeal, and (3) ventricular. This is hardly accurate or complete, though not absolutely objectionable. Symptomatology is taken in the unqualified or unqualified sense as understood in the time and the place where it is now generally used. The use of the word "intracranial" in this connection is not in accordance with the general usage and not in accordance with the general usage. Hemorrhage, pyogenic inflammation, and the like are not intracranial lesions, and the body is happily freed of

as to imply cause as well as location. A more accurate classification of hæmorrhages, if made purely in accordance with location, would be: (1) Epidural, (2) arachnoid, (3) subarachnoid; but as the arachnoid variety is merely an accidental extension of any subarachnoid hæmorrhage, and as the subarachnoid is of composite origin, a better, and I believe the best possible, subdivision is into (1) epidural, (2) pial, (3) cortical.

The matter of nomenclature is of absolute importance, since pathological exactness is essential to correct diagnosis, and a change of established form, always to be deprecated, becomes in this instance a logical necessity.

I at one time believed epidural hæmorrhage to invariably result from cranial fracture. I have more recently seen three cases in which it was occasioned by contusion from *contrecoup*. Its source may be either in the diploe or in the osseo-dural vascular connection. Pial hæmorrhage is caused by contusion of the pia mater and consequent rupture of its vessels, while cortical hæmorrhage, though occupying the same anatomical position in the subarachnoid spaces, is derived from laceration of the brain surface. These three hæmorrhages are always primary; arachnoid hæmorrhage, as I have stated, is always secondary. It is in most cases a cortical hæmorrhage which breaks through the pia and visceral arachnoid; a pial hæmorrhage from contusion is not often in sufficient amount to rupture the arachnoid membrane, though an occasional instance will be found in the histories which I have presented. That blood from the osseo-dural vessels may reach the arachnoid cavity when the injury at the same time involves both bone and dura is evident, but that no epidural hæmorrhage in itself has power to rend the dura seems equally certain; the fibrous structure resists while the brain substance is compressed and displaced, even though blood is effused in enormous and fatal quantity.

Intracerebral hæmorrhage is the result of subcortical laceration, or rather a part of it, and therefore not a distinctive lesion.

The differential diagnosis of hæmorrhage is of special importance, since of all the intracranial lesions it most frequently admits of operative interference. Its origin and location are no less important as constituting a second factor in determining the propriety of operation.

A casual examination of the cases which I have recorded will demonstrate the exceeding frequency of hæmorrhage in all forms of intracranial injury. In nearly sixty per cent. it has occurred in sufficient quantity and in such relation as to largely influence the final result, and to become a more or less determinate factor in the genesis of symptoms. In one third of this percentage it has been the *direct and probably the sole cause of a fatal termination*. It is doubtful, however, if it is ever an isolated lesion. In a *very large proportion of the whole number it was secondary to laceration*, and while this was in itself often insignificant, the hæmorrhage was none the less profuse and accompanied both confusion and danger. In the remainder of cases, though *usually primary*, it was not unexpectedly associated with other pathological conditions. The same conclusion which is sufficient to separate the data from the

bone, or to rupture the vessels of the pia mater, can hardly fail to be transmitted to the brain, and its effect either concentrated in a local laceration by *contrecoup* or diffused in a general contusion of its substance. A hæmorrhage is often regarded as uncomplicated from want of sufficiently careful necropsic inspection of the brain throughout its whole extent. There may be no laceration or other obvious local injury, and general contusion is readily overlooked.

I have but once observed in necropsy a hæmorrhage where the associated cerebral contusion seemed so slight as to be unimportant. There are twenty or more cases, however, in which hæmorrhage was the essential lesion, and which, perhaps, afford sufficient ground for inductive examination. There is probably a larger number than I shall analyze, but it is impossible to rate them with even approximate precision. They include nine epidural hæmorrhages and eleven of pial or cortical origin, of which five had reached the arachnoid cavity. If to these are added eight cases which were subjected to trephination, and in which the existence and location of hæmorrhage was thus verified by operation, and in which no considerable depression of bone or other evident complicating lesion existed, the total number will be increased to twenty-eight. One of the operative cases disclosed both epidural and arachnoid hæmorrhage, and terminated in death; the others were all of epidural character, and resulted in recovery.

The symptoms observed were not numerous, and of these temperature, when considered with proper regard to its surrounding conditions, was of greatest diagnostic significance. In seven of the necropsic cases it was unrecorded; in seven of those remaining it was on admission subnormal; in five it was 99° to $99^{\circ}+$; and in one, which also involved slight contusion of the corpus striatum, it was 101° . In those cases, three in number, in which it subsequently exceeded 101° , there were notable coexistent lesions of the brain substance; one presented extensive lacerations of the base, another extensive general hyperæmia and œdema, and in a third, in which the temperature rose from 94° to 102° in the eight to ten hours which preceded death, there was implication of a supposed heat center. In the operative cases the highest temperature was 101.6° , and in the only one in which it exceeded that degree it reached 102° after the formation of a fungus cerebri. I have already attributed the early subnormal temperature to shock, and, when the patient has survived this condition, I have seen that the temperature has been restored with the general reaction. In each case in which subsequent elevation exceeded $101^{\circ}+$ there has been marked general contusion or other concomitant injury of the parenchyma of the brain. In these twenty-eight cases, therefore, best fitted for observation, the temperature characteristic of hæmorrhage has been found to range from above normal to $101^{\circ}+$.

The one constant symptom in fatal cases was some degree of unconsciousness. In the majority it was profound, or at least complete, from the moment of injury to the end of life. In four others consciousness was primarily lost, and, after more or less complete restoration, was merged in final coma. In three instances consciousness was

retained for some length of time, during which the patient walked for a considerable distance, and then either gradually or suddenly became unconscious. In another case of late unconsciousness delirium followed, and continued till death occurred. In a final instance unconsciousness was primary, but, as in the case just mentioned, delirium followed hard upon it without a period of conscious intelligence. In the operative cases in which recovery ensued, and in which it is fair to assume that the effusion was smaller, loss of consciousness was less constant, occurring in but half their number. In two the mental condition remained unaffected, and in one unconsciousness was replaced by delirium; in three cases in which it was a symptom, it was very transitory in two, and in one but moderately prolonged.

The varying phases of unconsciousness, the diverse symptomatic conditions with which it is associated, and the uncertain period of its occurrence, render it impossible to accept the traditional explanation of its existence, that it is solely dependent upon a mechanical compression of the subjacent brain substance. It is probable that as a primary symptom—as an instantaneous result of injury—it is due to general contusion, which is itself an instantaneous lesion. It has been seen in the larger number of the fatal cases collated that it has been absolutely the first symptom, not only at the time of admission, but as learned at the scene of accident and noted in the ambulance history. The effusion of a sufficient amount of blood to act mechanically requires an appreciable interval. This is evident in two of the cases of rupture of the arteria meningea media, in which some hours elapsed before the patient became unconscious, and in which the epidural clot was found to be of enormous size. There may or may not be a restoration of the intellectual faculties between the earlier and the later lapses of consciousness. The general cerebral contusion may be so severe that the unconsciousness which it produces will continue till the effusion has become sufficient to occasion the same condition as a direct result, and one is lost in the other. It is also possible that the central lesion may be insufficient to annul consciousness for the time necessary to the effusion of blood in sufficient quantity to act as an immediate stupifying agent. This opinion as to the manner in which loss of consciousness occurs in intracranial lesions will be strengthened by the wider comparison of cases to be made, in which hemorrhage was a contributive rather than an essential lesion, and in the direct study of other forms of injury.

Much importance has been attached to disturbances of the pupils in intracranial hemorrhage. The cases under present consideration present instances of some change in the pupillary condition. It has been noticed in two of three which were fatal and in three of those which were subjected to operation. It has been noticed in but three out of the remaining twenty-three. The pupils in but some of a somewhat large number of cases were pupally contracted, that of a nature with contraction. In all both pupils were dilated the hemorrhage being on three occasions, in two parietal and in one epidural and unresorbable, and in three both pupils were contracted, the hem-

orrhage being in one epidural, in one pial, in one both epidural and arachnoid, and in one both epidural and cortical. In two the pupil was dilated on the side of injury and contracted on the opposite side, the hemorrhage in each being epidural; in two the pupil was contracted on the side of injury and dilated on the opposite side, the hemorrhage in each being epidural and derived from the middle meningeal artery; in three the pupil was dilated on the side of injury and normal on the opposite side, the hemorrhage in each being epidural; in three the pupil was normal on the side of injury and dilated on the opposite side, the hemorrhage being cortical in two and epidural in one. There was no instance of contracted pupil on either side without change in its fellow. In the three cases in which both pupils remained normal the hemorrhage was epidural in one, pial in another, and cortical in the third. The hemorrhages occurred upon every part of the cerebral and cerebellar surfaces, vertex, and base.

There seems to be no change in the pupils, Hutchinsonian or otherwise, which is positively characteristic. In two thirds of the cases analyzed the hemorrhage was wholly or in part epidural, and in two thirds of these again one pupil or both was dilated; but as in the aggregate all sorts of pupillary changes resulted from all sorts of hemorrhages, their observation can be scarcely more than confirmatory of an opinion justified by the collation of other symptoms. Their condition as to mobility was scarcely more to the purpose; in the far greater number, whatever the origin, location, or amount of hemorrhage might be, they were freely movable.

The pulse was unnoted in three cases; it was normal in four, in two of which the hemorrhage was epidural, covering the convex surface of a hemisphere, and in two was of subarachnoid origin, occupying the inferior occipital fossae. In the larger number of cases it was frequent, and the hemorrhage, usually large, was of either variety and variously situated. In six cases in which the pulse was slow, the hemorrhage was in each instance epidural, and the patient profoundly unconscious, and in four the respiration was stertorous. In neither the fatal nor the operative cases was there any definite relation discovered between the character of the pulse and the nature of the hemorrhage, or between it and the associated symptoms.

There is another pulse condition, a want of symmetry in radial pulsation upon the two sides of the body, which I have found to be in connection with both hemorrhages and visceral injuries, and shall give consideration hereafter.

The respiration afforded more definite indications. It was normal in but a single instance. It was increased in frequency in five cases moderately and very markedly in six others. In six others the respiration having coincided with a large accumulation upon the anterior surface of the brain. In three cases the respiration was continuous and in seven of them the hemorrhage which was situated in each case was unnoted, but pronounced the general surface upon the side of injury, or occupied an anterior fossa, or the other case it was rapidly resorbed, occurred and passed away without the medicine. Several other operative cases

ering cases presented any noticeable deviations from normal respiration.

The disturbance or abrogation of muscular function was an occasional symptom, and was exhibited in accordance with established laws of cerebral localization. Paralysis occurred in three of the fatal cases and in two of those which recovered after operation; it was hemiplegic in four and paraplegic in one. Muscular rigidity, affecting one side or both, occurred in five cases, and general convulsions in one which was fatal. In each case some part of a motor area was covered by the hæmorrhage, which was indifferently epidural, cortical, or pial, and acted as a paralyzing or irritant lesion according to its extent and situation. These motor disturbances, while of great positive diagnostic importance, are so frequently absent that they have no corresponding negative value.

In a single case there was protrusion of both eyes as well as dilatation of both pupils. There was found an epidural clot in the right inferior occipital fossa and an arachnoid hæmorrhage which covered both frontal, and the parietal lobes as far as the fissure of Rolando.

Sensory disturbances were still more infrequent. Delirium was noted in three cases: in one which recovered it was primary, and the hæmorrhage, as disclosed by the trephine, was epidural and in trivial amount; in two fatal cases it was of later occurrence, followed a previous condition of unconsciousness, and was associated, in one with a pial hæmorrhage over the right hemisphere and inferior surface of both occipital lobes, and in the other with a cortical hæmorrhage covering the pons; in both general contusion was well marked. Partial anæsthesia, irritability, and restlessness were observed in isolated cases.

In order to further test the diagnostic value of the symptoms observed in this limited number of cases, I have analyzed thirty-four others in which, though the associated lesions were more severe, the hæmorrhage was sufficiently large, absolutely or relatively, to be a probable source of distinguishable symptoms. They present some points of difference which naturally followed from different attendant conditions. In the larger proportion of both necropsic and operative cases, in which hæmorrhage seemed to be the single source of danger, it was of epidural origin. In the present group of cases, in which the brain and its membranes are more seriously involved, it is with few exceptions essentially pial or cortical. When these parts are the seat of excessive general contusion without laceration, the pial vessels are certainly the ones most likely to suffer rupture, and in fact in every such instance the hæmorrhage, if subdural, was of this character; in two it chanced to be epidural. When the brain substance is superficially wounded, the cortical vessels are obviously most likely to be the source of hæmorrhage. It is also notable that when life is prolonged the symptoms of hæmorrhage should be often modified, superseded, or complicated, by others characteristic of the additional lesions.

The temperature, as its diagnostic importance. It is generally higher than in the previous instances, and hæmorrhage was the exception. In ten cases it ranged from 102° to 107°; and in twenty-six it was above 103°. In

the cases which terminated fatally within twenty-four hours, which was the limit of life ascribed solely to hæmorrhage, the temperature, as in them, did not usually exceed 101°+; in four, however, in which death occurred within even less than twelve hours, it rose to 102°2', 106°8', 107°8', and 103°. Subnormal temperatures on admission were infrequent.

Consciousness in these cases, as was noted in those subjected to operation, was less uniformly lost than when death seemed to result directly from hæmorrhage, yet in far the larger number its loss was primary, complete, and permanent. In some it was at first partial, but progressive, and eventually complete; in others primary unconsciousness merged in delirium; in a few instances consciousness was at first retained, only to be lost at a later period. In general, the results of this examination are confirmatory of those obtained from the study of the less complicated cases.

The pupillary condition was less diversified than in the cases previously detailed. It was normal in about the same proportion of those in which record was made. There was much more frequent dilatation of both pupils—more than twofold; an equal number in which both were contracted, and consequently fewer instances in which the two presented opposite conditions. As before, there was no case in which one pupil was contracted without change in its fellow. When both pupils were abnormal the hæmorrhage was usually bilateral; and in unilateral dilatation the hæmorrhage was usually upon the corresponding side; but in neither instance was the rule invariable. In the two cases of normal pupils the hæmorrhage, which was large in each, was epidural in one and pial in the other, and in each was associated with important change in the brain substance.

The pulse when registered was, perhaps, under the influence of opposing forces, usually normal. It was occasionally slow or unduly frequent, but oftener exhibited that want of symmetry in force and fullness upon the two sides which I have mentioned as occurring in different forms of intracranial injury.

The respiration was unnoted in a third of the cases, and in many of these, which were among my earlier observations, it was doubtless unaffected, since at that time normal conditions were unrecorded. If moderate allowance be made for such omissions, the proportion of mixed cases in which its frequency was from 18 to 24 in the minute, and in which it was without special characteristics, was from one third to one half, while in those in which hæmorrhage was more nearly an isolated lesion it was of normal character in but a single instance. It was stertorous in about the same proportion of cases as in the former class, so that those remaining, in which it was abnormally slow or frequent, are necessarily few.

The muscular system again not infrequently afforded symptomatic indications. In each instance in which an irregular excitation of functional activity was manifested by either clonic or tetanic contraction the hæmorrhage was complicated by cerebral or cerebellar laceration. In others, in which muscular power was lost or held in abeyance, the complicating lesion was invariably general contusion. Clonic

contractions were relatively frequent; general convulsions, while but once observed in the class of comparatively pure hæmorrhages, and then as merely localized convulsive movements, occurred in six of the mixed cases. General muscular rigidity in the two classes occurred with more nearly equal frequency. These facts are suggestive of the influences exerted by different lesions.

Since, in the group of cases under consideration, the hæmorrhage is in each instance associated with some serious injury of the immediate seat of sensory and intellectual function, symptoms which depend upon disturbance rather than upon simple oppression of the nerve centers are to be regarded here as only indirect. Delirium, irritability, or restlessness, when of immediate occurrence, and the effusion of blood is moderate in amount, may be considered symptoms of hæmorrhage, but only in the sense that a pleuritic pain is counted a symptom of pneumonia. It is unnecessary, therefore, where direct brain injury is a recognized factor, to investigate such conditions while engaged in the study of uncomplicated hæmorrhages.

There are two symptoms which have been often held to be diagnostic of intracranial hæmorrhage: these are loss of consciousness following cranial injury after some appreciable interval, and dilatation of the pupil. This view is not well sustained by the statistical facts which I have collated. Reference to either group of cases will disclose comparatively few instances in which consciousness was lost in the manner indicated. Some change in the pupillary condition was found to occur in most of them, but it was varied in character and not to be regarded as typical in any one of its forms. Various other symptomatic manifestations have been suggested as indicative of this particular lesion. Some of them, like the dilated and insensible pupil, occur often enough to afford corroboration of an opinion founded upon other evidence; others which are possible, but, in fact, infrequent, are given an exaggerated diagnostic importance; and others still, when they chance to exist, have no relation to hæmorrhage. The absolute value to be attached to these so-called pathognomonic symptoms can be only determined by a reference to the results of actual observations in such an extended series of cases as I have in this instance collected.

(To be continued.)

Naval Intelligence.—*Officer List of the United States Navy for the year ending January 1, 1894.*

PURVIS, M. R. (Passed Assistant Surgeon). Detailed from the United States Navy and assigned to the Marine Hospital.

LEWIS, S. G. (Passed Assistant Surgeon). Detailed from the United States Navy and assigned to the U. S. Marine Hospital.

Marine-Hospital Service.—*Official List of the Stations of the United States Marine-Hospital Service for the year ending January 1, 1894.*

SMITH, G. W. (Surgeon). United States Marine-Hospital Service. Detailed from the United States Navy.

ROBERTS, M. J. (Passed Assistant Surgeon). Detailed from the United States Navy and assigned to the Marine-Hospital Service.

THE USE OF METALLIC ELECTRODES IN THE TREATMENT OF NASAL AND POST-NASAL DISEASE.*

By CLARENCE C. RICE, M.D.

To employ the galvanic electric current to decompose a metal, to form a new salt, and to transmute this salt into animal tissues, all by a simultaneous action, for therapeutic reasons, it must be admitted is a remarkable scientific procedure, whether the benefit obtained thereby be great or small. The use of the constant current with an oxidizable metallic electrode does all of this. It is pre-eminently the Gautier method, he having devised it and given to it the name of "interstitial electrolysis" or "medicamental electrolysis."

Dr. William J. Morton, of New York, who first called my attention, more than a year ago, to the usefulness of the application of such electrodes as those made of copper, zinc, and iron to the mucous surfaces, has given to this electrical procedure the names of "electric medicamental diffusion" and "metallic electrolysis," which seem to me better titles.

In the short paper which I shall present to this association, as I am in no sense an electrician, I shall be obliged to quote largely for my scientific data from the writings of Gautier,† from information very kindly given me by Dr. W. J. Morton, and also from the most admirable paper on Metallic Electrolysis read by Margaret A. Cleaves, M.D.,‡ of New York, at the third annual meeting of the American Electro-therapeutic Association.

This Gautier method consists simply in using a solid metal electrode for the positive pole, which is to be applied to the part to be treated, while the negative pole is the ordinary rubber covered sponge electrode, three or four inches square, applied to any portion of the body, preferably to the back of the neck (or to a location somewhat near the part to be treated by the copper end. The application of this method is comparatively recent, Dr. Gautier having brought it into therapeutic use within the past three years.

Dr. Cleaves gives this definition of "metallic electrolysis," that it is "a method which makes use of the chemical action of the positive pole (between foreign substance—that is, metals, such as copper, zinc, and iron—and the tissues of the same class."

Gautier experimented with the copper electrode for the purpose of ascertaining what the effect of the electric current was upon the organic structures—that is, what changes were effected there by the passage of the current, and also what the effect was upon the tissues in which the current was applied. He first discovered that in using the copper needles with a current of five milliamperes, instead of into the tissues of a subject lying down an application of

* Read before the American Electro-therapeutic Association at its annual meeting, 1894.

† *Pratique Médicale*, 1890, 1891, 1892, 1893, 1894.

‡ *Currents in Medicine*, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 2960, 2961, 2962, 2963, 2964, 2965, 2966, 2967, 2968, 2969, 2970, 2971, 2972, 2973, 2974, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597,

ten minutes these needles were perceptibly diminished in weight and the copper thus lost was found to be infused in the muscles of the rabbit. His next experiments were performed to see what the nature of this newly formed copper salt was, and whether it was poisonous to the living tissues. He ascertained that the salt was an oxychloride of copper, and that it produced no harmful results when a two-percent. solution was injected into rabbits.

Dr. Cleaves in her paper explains the electrical action which takes place in this way: "So far as conductivity is concerned, the human body may be regarded as a two-percent. solution of sodium chloride. By electrolysis of the tissues in contact with the positive pole there are always set free oxygen, acids, and chlorine; these, in turn, attack the soluble metallic electrode, whether sound or needle, and we have formed as a result an oxychloride of copper, zinc, or iron, as the case may be."

It may be doubted whether the benefit of the application of oxidizable metallic electrodes to the nasal and pharyngeal mucous membrane depends in any sense upon any germicidal effect of the copper or of the current, but Gautier carefully tested the effect of the positive pole upon the *Bacillus pyogenes*, and he found that the oxychloride of copper at the positive pole destroyed the pus bacillus after fifteen minutes' application of a forty-milliamperé current. The influence exerted by non-oxidizable electrodes by the Apostoli method was much less.

In addition to the electrolytic action of the current, whereby an oxychloride of copper is formed, we are told that another action, scientifically designated as the cataphoric property, is of equal importance in this method of electrical application. This cataphoric property causes the surrounding tissues to become impregnated with the copper salt for a distance around the needle depending upon the intensity of the current and the duration of its application.

The following experiments at Dr. Morton's office have been effected: A copper needle attached to the positive pole was inserted into a piece of meat or hard-boiled egg, the negative pole being a platinum needle. They found that by using a current of forty milliamperés for five minutes the copper salt was transfused through the meat or egg for the distance of a third of an inch around the copper needle.

The physiological action of the copper electrode is more easily studied upon the uterine cavity than in the nose or throat or upon the eye. It has been found that the diffusion of the copper salt in the uterine mucous membrane, submucosa, and muscular tissues first causes a temporary congestion of marked degree, and I understand that it is not uncommon to apply a current of such strength that there is more or less exfoliation of the mucous membrane; but I have never seen this occur in applications to the nose and throat.

This Gautier application differs quite markedly from the galvanocautery method bearing the name of Apostoli. This latter method is, as you all know, electrolytic in its action. It has many been the custom in this procedure to use non-oxidizable electrodes, such as platinum, steel, or, if available, graphite have been employed, such as

copper wire or nickel-plated copper points, they have been used at the negative pole, which is inactive—that is, not affecting the electrode. Dr. Morton tells me, however, that it has recently been discovered that there is action at the negative pole on aluminum. In the Apostoli method the tissues only are acted upon and separated into their original elements—at the positive pole acids, chlorine, and oxygen, and at the negative, alkalies and hydrogen.

As you will all remember, Dr. Shurley,* of this association, read a paper in 1880 upon the treatment of pharyngitis sicca by the use of the galvanic current. He applied the positive pole to the mucous surfaces, but I do not find any mention as to what kind of an electrode he employed. If it was the ordinary nickel-plated copper, then there would have been decomposition of this electrode, first the nickel and then the copper, and they would have been transfused into the tissues, which is practically the Gautier method.

Dr. Delavan,† in 1887, read a paper on The Treatment of Atrophic Rhinitis by the Application of the Galvanic Current. He employed the copper-wire electrode covered with wet absorbent cotton; but this was at the negative pole, so that the action was exerted on the tissues alone, and the character of the electrode was not significant. If the positive pole had been used the cotton would have prevented the diffusion of the copper into the tissues.

The application of the galvanic current by the Apostoli method to mucous membranes must always be considered as either astringent or caustic in its effect, according to the intensity of the current. In the Apostoli method the energy of the current is used in its decomposing action upon the tissues; in the Gautier it is exhausted in the decomposition of the metallic electrode and in its transfusion into the tissues.

Dr. Morton, who has made careful experiments in order to ascertain the difference in effect between the use of the galvano-caustic method with the platinum electrode and that of the copper electrode, as applied to the uterine mucous membrane, reports that with a current strength of fifty milliamperés with a platinum electrode the mucous membrane was very much congested and the positive pole was surrounded by dilated blood-vessels which did not contract in a satisfactory manner. With a copper electrode and with the same strength of current and length of application there were no traces of destruction of tissues or surrounding inflammation.

Dr. Cleaves writes that the Apostoli or galvano-caustic method is characterized by unoxidizable electrodes, high intensity, and short duration of application, and the Gautier method by oxidizable electrodes, low intensities, and long sittings.

It is maintained that the advantages of the Gautier method of applying such astringents as copper and zinc over the topical application of such metals in solution are that in electrolysis the copper can be carried accurately to the

* Shurley. On Atrophic Pharyngitis. *Transactions of the American Laryngological Association*, 1880.

† Delavan. The Treatment of Atrophic Rhinitis by Applications of the Galvanic Current. *Transactions of the American Laryngological Association*, 1887.

most obscure and inaccessible part; second, that salts in this newly born state are much more active than in chemical combination; third, that as pathological conditions usually lie deeply under the mucous membrane, they can be reached by the impregnation of the tissues with the copper salt far better than when it is simply applied to the mucous surface; and fourth, benefit is claimed for the action of the electric current itself.

I believe that Dr. A. H. Goelet, of New York, devised the first copper electrodes used in this country for uterine work. Dr. Morton has had shorter ones made, which are preferable to the longer ones for nasal and post-nasal application. These copper electrodes can be tipped at the end with hard rubber to make the point inactive, and they can be insulated for nearly their entire length with a sheath, or they can be entirely insulated on one side with hard rubber, as Dr. Cleaves has done with the small, ingenious copper electrodes which have been used by her and others in the treatment of trachoma. The needles employed in what Dr. Morton styles cupric puncture were devised by him.

In gynecological work we are told that a current strength of from twenty-five to fifty milliamperes may be used, and the length of a sitting should be about fifteen minutes. Of course the current is accurately measured by its passage through a milliamperemeter. In the uterine cavity, where this intensity is used, and where it is difficult to keep the electrode in motion, it is apt to become fastened to the mucous membrane, and it becomes necessary to loosen this by a reversal of the poles, using a current of five or ten milliamperes. I have never found this necessary in the nose or pharynx, not as a rule, using more than five milliamperes, and being able to keep the copper electrode moving. In uterine work they are accustomed to make these applications not oftener than three or four times a month. In most nasal cases I have used the Gautier method twice a week.

Something more than a year ago Dr. Morton called my attention to the usefulness of this application to nose and throat disorders. He had at that time, I believe, used it in a few cases in his private practice, and upon a larger number at his clinic. His results have not yet been published, but he tells me they are satisfactory.

I began the use of metallic electrolysis in that line of cases of nasal disorder in which no marked hypertrophy was present, either of the septum or turbinates, in which hypertrophy had been removed by operation, and where that annoying symptom, supersecretion, remained. You all know that there are many cases of nasal disease in which supersecretion is pretty satisfactorily checked by the removal of nasal obstructions. Ordinarily there are many others in which, though the breathing is improved by operation, the unsatisfactory symptom of backing and sneezing the throat to remove accumulations of mucus is not greatly relieved. I commenced using this copper electrode with the hope of neutralizing the abnormal amount of secretion in these cases.

The general method did not seem to me to be a rational substitute for specific work in the removal of

either soft, cartilaginous, or bony enlargements, although Dr. Morton and Dr. Cleaves have, I believe, used it with more or less satisfaction in cases of nasal stenosis.

In the eleven clinical cases reported in Dr. Cleaves' paper, four were applications made for uterine disease, three in cases of trachoma, and four for nasal and throat trouble.

In her first nose and throat case the prominent symptoms seem to have been an irritating cough and a disposition to swallow almost constantly. She simply says that six applications were made and that all the symptoms disappeared. Exactly what the pathological condition was we do not know.

The next case was in a child of nine years of age having a muco-purulent discharge, with nasal and pharyngeal obstruction. Fourteen applications were made, and the abnormal symptoms disappeared. We are not told what the condition was here, but it would look as though it were adenoid enlargement at the vault of the pharynx.

We should not recommend the metallic electric treatment in the removal of adenoid, since it can be taken away so expeditiously by the usual methods.

I do not propose to give a detailed history of any of the many cases in which I have applied the copper electrode during the past year. Some of them have presented quite marked improvement. I have been able to check an irritable cough due to pharyngeal or laryngeal catarrh by two or three applications; but it has seemed to me that this was accomplished rather by the galvanism than by the effect of the copper. I have used the cupric puncture with Dr. Morton's needles in cases of enlarged follicles on the posterior wall of the pharynx, and have satisfactorily reduced them in size. It is a slower process than the use of the actual cautery, and perhaps is no better.

As I have said before, my nasal cases which have been selected for this treatment have usually been those in which the two symptoms were catching cold easily and frequently, and the presence of an annoying amount of mucus in the nose and pharynx. These cases I have treated about twice a week, and have not often used a stronger current than five milliamperes, as, in going beyond this strength, the patient complains of pain and dizziness in the head unless cocaine is employed, and it seems to me wiser not to use cocaine, in order to obtain the benefit of the patients' sensations.

I have treated my cases twice each week, and in the following manner: First, the mucous membrane is thoroughly cleansed by an alkaline wash, then the large negative sponge electrode is placed on the back of the neck and the small nasal copper point is rubbed thoroughly both along the septum and over the turbinated bed, and, although the nasal channels into the vault.

During the application of the current, mucus in the anterior nares with a current of five milliamperes, which is increased to a point in the upper meatus if necessary. A soft hook is then used to dislodge the mucus, and a general amount of treatment is given in the form of the other symptoms. When the pharynx is involved in the generation of the nasal chambers, there is a slight feeling of stinging

appropriate beyond all question. We assure Dr. Daland of our sympathy, and we believe that he will receive that of the entire medical profession. There is nothing to be said against Dr. Daland's successor, Dr. Hobart Amory Hare, but there is this much to be said in condolence, that he enters upon an office under circumstances which threaten to handicap him as a progressive student of experimental medicine, in which he has already distinguished himself. It is to be hoped that hospital boards in general will not be inclined to follow the retrogressive example set them by the Philadelphia Board of Charities and Correction.

MINOR PARAGRAPHS.

THE GERMAN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

On a recent occasion, that of an anniversary festival held by the *Deutsche Medizinische Gesellschaft* (the State, New York), a few native American physicians had an opportunity of getting a little insight into the depth of German hospitality and of listening to some very cordial and interesting speeches. It may not be inappropriate to make special mention of Dr. Jacobi's speech, an abstract of which we print elsewhere in this number of the *Journal*. Dr. Jacobi has lived in New York for many years and he knows its people thoroughly; moreover, nobody ever doubted his sincerity. That he should have been able in a rapidly spoken response to a toast to mention so many and such notable matters as standing to the credit of the medical profession in a country that has yet had but little more than a single century of independent existence is exceedingly gratifying. The German physicians who live in the United States—and by German physicians we mean those who are German by birth, by descent, by education, or by affinity—are a welcome addition to the American medical profession. They are practically all here to stay, they have cast their lot with us, they respect and like us the more the longer they have been here, and we heartily reciprocate.

THE DIPHTHERIA SERUM THERAPY

It seems that Professor Behring's particular method of antitoxine treatment is meeting with very lively opposition in Germany. At a meeting of the *Deutscher hygienischer Verein* held on November 28th, Dr. Baumgarten made remarks, the result of which still nearly five members of the *Deutscher Medical Association*, in which he formed the initiative party of the secession, are presently active, and its members have resigned. He stated also that two physicians, the physicians of Dreyersdorf, depended on the latter secession.

A NEW PHASE OF NEW PAPER MIDDLES

THE NEW YORK TIMES THINKING THAT long discussions have not done the trick, now telephoned the owners of another newspaper to have them take the burden of supplying the FBI. "I suspect some real discussion of the recent agreement," as a newspaper it begins this column, with a representation of one of the editorial pages by a transcription of some remarks by Dr. Louis Martin, reported in the *Wall Street Journal*. The few sentences of this transcription, such as "green-mouthed," will be lost among the *Times*'s normal business.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 18, 1894:

DISEASES.	Week ending Jan. 11		Week ending Dec. 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	14	7	16	8
Sandfly fever.....	91	10	111	7
Enterotropical meningitis.....	2	2	3	4
Mumps.....	63	8	62	1
Diphtheria.....	232	45	241	41
Small pox.....	7	1	2	0
Tuberculosis.....	157	120	8	100

A Complimentary View of American Medicine.—At the recent anniversary festival of the *Pontische Gesellschaft*, Gesellschaft der Stadt New York, on Saturday evening, the 15th inst. Dr. Jacobi responded to the toast of *die amerikanischen Collegen*, and said that he proposed to speak of the American physicians as scientists, as practitioners, as citizens of the country and members of the profession, and as colleagues. The first two were practically one, inasmuch as the two could hardly be distinguished in a science which was eminently practical. He referred to S. Bellingham, who left Harvard College in 1642 to complete his studies in Leyden; to Cadwallader, who, in 1751, delivered his first systematic course of lectures in Philadelphia; to the first Philadelphian who was made bachelor of medicine, in 1768; and to the first New York doctor of medicine, made one in 1770. During and since this time American medicine had developed in connection with the English for the same natural reasons that, in Europe, the northern part of Switzerland developed its medicine on the basis of German medicine and the western part on that of France, and Most of Russia, in the basis of German and French medicine. American physicians were never slow in learning from and emulating Great Britain. In the year 1796, when Jenner introduced his vaccination, Watson, Rush, and others followed him to England in Boston. But American medicine was never simply imitative. The speaker referred to the still classical essays of Bard on diphtheria; to the medical inquiries of Rush, who, at the same time, was a student and later a colleague of the famous and independent and an intimate personal friend of George Washington; to the classical essays of William Currie on the diseases most prevalent in the United States, published in 1811; to McDowell's first *Lectures on Hygiene*; to Marshall Hall's *Principles of Hygiene*; to Drake, one of the best practical doctors in practice; to the two latest volumes of the *Medical Dictionary of the Medical and Natural Sciences*. He also referred to the great work of the present generation, by the editors of the *Journal of the Association of American Physicians*, a series of papers, written by Lusk and others, on the subject of "General Principles of Therapeutics," and to the *Practical Treatise on General Principles of Therapeutics*, edited by Parry, and to the *Treatise on Therapeutics*, edited by Osier, who, we think, has supplied the most useful and valuable treatise on the general principles of therapeutics yet published. On the subject of medicine, he made no further allusion, but concluded his remarks by saying that it was his duty to say that the American physician was not inferior to any other physician in the world, and that he was proud to call himself an American physician.

his immortal operations on arteries; to Marion Sims, for his inventive genius and new operative methods; to Cheever, who was the first to operate on the pharynx from the side of the neck; to Weir Mitchell, for his works on injuries of the nerves and for many other great achievements; to Bigelow, for his operations on the bladder; to Beard, whose name had become a household word in both hemispheres in connection with neurasthenia. Dr. Jacobi also referred to such monographs as were strictly scientific, like those of Horace E. Wood on fever; to those of Weir Mitchell on snake poisons; to Fitz's original work on the pancreas; to Minot's book on embryology, and to the many valuable original papers contained in the cyclopædias of Pepper, Keating, Starr, and Keen and White. He also emphasized the fact that there was no specialty that had not had its great representatives among the American practitioners and scientists of the last twenty or thirty years. He mentioned particularly La Roche, Alonzo Clark, Flint, Da Costa, Osler, Mott, and Willard Parker, who was the first, together with Hays, of Philadelphia, to perform tenotomies after the manner of Dieffenbach, even before the arrival of Detmold in this country. He mentioned many names in connection with the other specialties, particularly those of Stillé and of Wood and Baebé for pharmacology; that of Leidy for anatomy; and those of Billings and Fletcher in connection with the greatest lexicographical enterprise of our times, and perhaps of all times, the *Index Catalogue of the Library of the Surgeon-General's Office* in Washington.

In order to prove the presence of education and culture among a number of the American medical men, he again referred to Holmes; to Josiah Nott, who in his time was one of the most learned Egyptologists; to Weir Mitchell, who, while being a recognized authority on neurology, was known as a poet and historical writer; and to John Watson, who had been both a good surgeon and a good medical historian.

The speaker added that the spirit of American medicine, like that of Anglo-Saxon medicine in general, was decidedly objective. It had enjoyed a healthy development from the very beginning and had never swerved, as it had, for instance, in Germany, where for the first forty years of this century it had been lost in mysticism and so-called natural philosophy. During all this time American medical life had had one great blemish, which was that the profession had, by its fighting and ostracizing the German fad of homeopathy, instilled more vigor into the medical sects than was perceptible in any other country.

The speaker then alluded to American physicians as members of their own profession, and laid particular stress on the fact that we had no protective organization due to the State or to the general Government; that whatever improvement there was had been due to the exertions of the profession alone; that the American principle of "help yourself" was always visible in the doings and progress of the profession. This self-protection had been the cause of the origin of the code of ethics, which enforced a discipline that was not known in Europe, and extended affecting in general and the announcement of a specialty in particular, which were not at all forbidden in the professions of Europe. It was the mass spirit of self-protection, however, rather than the spirit of increased moral strength, which, chiefly in the State of New York, had led to the creation of the medical boards of ethics, in no former necessary. It was due to the efforts of the profession in regard to the State and to a number of the members of the profession themselves that a system of protection of professional knowledge had been established, and an immediate requirement for the study of medicine. It was due to the result of the exertions of the profession, and not of the medical boards, that the course of

medical instruction had finally been lengthened and multiplied, and the principle of State examinations adopted. The absence of State protection and State organizations had led, in the American profession, to the establishment of large co-operative societies, State societies, the American Medical Association, and the Congress of American Physicians and Surgeons. It was this spirit of co-operation which had led to the flourishing condition of medical societies in New York, and particularly to that of the New York Academy of Medicine, which had had its own large building years before the brilliant profession of Berlin owned its Langenbeck House.

Finally, the speaker referred to the American profession as colleagues. He said that there was no country on the globe where strangers would be received with the same generosity and liberality as here. Every one of those present knew that there were no obstacles thrown in their way by the profession; on the contrary, very many of them had met with a friendly reception, enjoyed all sorts of privileges, had occupied and were occupying public places, were often recognized as leaders, and had every reason to be glad for having come to a country where the medical profession, after having had a glorious past, had still a greater future in store.

Society Meetings for the Coming Week:

MONDAY, December 24th: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Clinical Association.

WEDNESDAY, December 26th: New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, December 27th: New York Academy of Medicine (Section in Obstetrics and Gynecology); New York Orthopaedic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, December 28th: New York Society of German Physicians; New York Clinical Society (private); Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Births, Marriages, and Deaths.

Married.

LESZYNSKY—CALM.—In New York, on Wednesday, December 12th, Dr. William M. Leszynsky and Miss Adèle Calm.

Died.

ATHENS.—In Lake Charles, La., on Friday, November 30th, Dr. P. C. Athens, aged thirty-two years.

JEWETT.—In Fitchburg, Mass., on Sunday, December 16th, Dr. George Jewett, aged sixty-nine years.

PINKHAM.—In Montclair, N. J., on Friday, December 7th, Dr. John Warren Pinkham.

RANNEY.—In New York, on Friday, December 14th, Dr. Martin L. Ranney, in the sixty-fifth year of his age.

Letters to the Editor.

MALTOSE VERSUS GLUCOSE.

BROOKLYN, December 15, 1894.

To the Editor of the *New York Medical Journal*:

SIR: In your issue of the 8th inst., Dr. D. E. Keefe takes me to task for what he deems some errors in my paper of November 3d upon Maltose versus Glucose. The doctor is certainly very liberal to himself in the interpretation he has put upon my words. It may be that I failed to fully elucidate my meaning at the point he has seen fit to attack, but certainly I never intended to say the thing he charges me with. It is impossible for an author to enter into the minute details of all his ideas. If he tried to, he would bury them in a fog of words. Perhaps I was too brief at the point cited and took too much for granted as to the ability of others to grasp an inadequately expressed idea. Grant that this is so, then the irony of fate has struck the doctor a severe broadside in return. He has written me a courteous note stating that a slip of the type made him mangle the quotation he intended to make from my article. As a slip of the type placed him in an unfavorable light by the brevity it imposed, so a slip of judgment on my part as to how far I should have entered into minute details has placed me in a similarly unfavorable light in the eyes of Dr. Keefe. Surely the doctor can not think that I did not know that the gastric juice could digest gluten. What young student of physiological chemistry does not know that there is no such thing as a distinct layer of starch covering the gluten of bread in the sense in which he accuses me of believing that it does?

Can the doctor not see that even his meat, eggs, casein, etc., are buried in starch in the sense of my paper, and that insoluble substances hinder the solution of soluble ones? Will it be necessary to point out the fact to him that this difficulty, slight at first, rapidly becomes worse and worse the more the paper mangles? Can he not see an advantage in attenuating masses of digestion such as Nature has given us, or does he think that all digesting could have been accomplished just as well at any single place, such as the stomach? With the mass of insoluble starch dissolved from around our food by the ptyalin, can the doctor not see that this clears the way for better work for the pepsin? When again the work of the pepsin is stopped by undigested starch, is it not well to turn it over to the amyllopsin, etc.? The old proverb that the last straw breaks the camel's back should be studied by Dr. Keefe. Anything that hinders normal digestion, if only for ten minutes, must contrIBUTE to ten minutes of abnormal fermentation, and if this does not lead to disease perhaps the doctor will tell us why. The doctor thinks I need instruction in the elements of physiology, and so he quotes Deaton. Let him try to show the subject from the starting point of my paper as a whole, and he can guarantee that it will be of as much to be studied in its entirety as such scraps as he perhaps I may not be the one. Physiological processes have advanced so far that it now seems almost incredible to me that Dr. Deaton speaks of the use of Frey's pump in the pathologic branch of physiology, and then we shall the quicker understand such errors. I do not object that digestion would be accomplished without ptyalin. It would, but with all the facts pointed out with it. These facts must go a long way from being a mere fact and not matter of course. My contention is that the doctor's contention is just the reverse of mine. It is true that the conditions are as good as those, and I deny it. I have no remedy to propose, but a good word for pancreatic juice seems through the cells of the stomach, but I have no stomach and I cannot see the value of it after all this time. I am glad to be told, however, that I am not alone.

Respectfully, Dr. Deaton.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Session at Annual Congress, held at Washington, D. C., on Wednesday, Thursday, and Friday, May 31 and June 1, 1894.

The President, Dr. D. BRYSON DELAVAN, of New York, in the Chair.

The Use of Metallic Electrodes in the Treatment of Nasal and Post-nasal Disease.—A paper on this subject was read by Dr. CLARENCE C. RICE, of New York. (See page 785.)

Dr. JONATHAN WRIGHT said that stimulated by the papers of Dr. Delavan and Dr. Shurly on the treatment of atrophic rhinitis, he had used the instrument in ten or twelve such cases, and had observed the same symptoms as had been described in the paper—coryza and an excess of watery secretion from the nose. Electricity was not to be relied upon at all, either for cauterization or motor work. In consequence of this he had abandoned its use. He could see no reason why in atrophic rhinitis there should be an increase in the secretion of watery fluid, or why in hypertrophic rhinitis there should be a diminution in quantity.

Dr. DE ROALDES, of New Orleans, said he had listened with great interest to Dr. Rice's paper, and regarded it as a commendable step in the direction of the application of electricity to our specialty. He was glad to see the method of interstitial electrolysis, with the production of medicinal agents in the nascent state, as devised several years ago by Dr. Gantier, of Paris, undergo new tests on this side of the Atlantic with new and improved electrodes. The good results obtained were, however, in his opinion, due as much to the beneficial effects of the galvanic current as to the action of the nascent oxychloride of copper.

The penetration of the tissues by this agent was undeniable. The unipolar method was used; he thought, however, it would be preferable to resort to the bipolar method.

In regard to the amperage used in these applications, now that electricity has been more generally used in the nose and post-nasal space, he would like to remind the fellows of the importance of maintaining records of experiments with reliable galvanometers, or a galvanometer standard lamp.

Dr. MERRILL of Baltimore, in a paper read at a meeting of the Society, mentioned the laryngoscope had been introduced at the universities of Oxford and Vienna, and was now used in the same by Dr. George Thompson, of Paris, where he used to study medicine. He said the instrument had been used to reach the vocal cords with the utmost accuracy of the patient. The use of the instrument in the treatment of laryngitis, he thought, was the first step in the treatment of the disease. Dr. Garrigue-Desarènes added in explanation that such was the history of the instrument and that he had been successful in the treatment of laryngitis, the larynx and trachea, depending on the growth of the vocal cords. He also mentioned that the instrument had been used in the treatment of the disease.

The first two years of the instrument, in the treatment of the disease, were passed with great success and with complete satisfaction. The instrument had been used in the treatment of the disease, and the results were most satisfactory. The instrument had been used in the treatment of the disease, and the results were most satisfactory. The instrument had been used in the treatment of the disease, and the results were most satisfactory.

plied with rheostats and milliampèremeters of different makers. Six months ago he had determined to make use of electrolysis, with tolerably high intensities, in a case of recurrent fibrosarcoma of the post-nasal space. The intensities, as endured by the patient, were so variable from day to day that, overlooking the question of resistance of the parts, the reliability of the instrument was at once suspected. One day the three different milliampèremeters registered so wide apart that they were tested with a standardized Weston instrument and found to register from thirty to fifty per cent. too high.

Since that he had adopted in his private office the last-named milliampèremeter, which, while costly, was certainly the most trustworthy instrument in the market. He thought that much greater accuracy of observation would be obtained in our electrical applications if the intensity of the current used was registered by thoroughly reliable and properly standardized milliampèremeters, and also if the resistance of the parts, by means of a simple and practical device, could be readily calculated by the operator.

Dr. JOHN O. ROE, of Rochester, said: I have had considerable experience in the use of the galvanic current, especially in the treatment of atrophic rhinitis. The electrodes that I have employed have been either nickeled electrodes or a flattened copper wire wound with cotton saturated with a saline solution before being introduced; and the beneficial results I have attributed solely to stimulation of nutrition. The employment of copper electrodes, such as those described by Dr. Rice, I have had no experience with, but shall certainly give them a trial, and hope to have as excellent results from their use as those obtained by him.

One word in regard to the employment of the milliampèremeter for indicating the strength of current that should be prescribed in different cases. In the first place, my experience accords with that of Dr. de Roaldes that, as a rule, milliampèremeters are more or less unreliable in indicating accurately the strength of the current; and secondly, that the strength of the current employed in the treatment of one patient is no indication of the amount that should be employed in the treatment of another patient. This is owing to the variation of the internal resistance of the body, not only of different persons, but of the same persons at different times. The same strength of current that one patient will take with perfect comfort may be exceedingly painful or unendurable by another patient. I regard, therefore, the sensation of the patient as a much more reliable guide for indicating the strength of the current to be applied in each particular case than the employment of the milliampèremeter, which can only be of service for measuring the strength of the current to be employed when the internal resistance of the body has been carefully ascertained.

Dr. WILLIAM H. DAILY said he considered the milliampèremeter as comparatively unreliable as our gas and water meters. When current was had done, they had not yet reached the point where they could construct a reliable milliampèremeter. The resistance to the electrical current differed, so Dr. Roe had seen, in different individuals and in the same individual on different days and at different times on the same day.

Dr. CANNING said he hoped to see any permanent effect being obtained in chronic cases, and attributed the changes to the copper salt rather than to the electrical action.

Dr. Rice said that it seemed to be proved that much benefit was to be obtained in the treatment of the cancer of the tongue when the positive pole had been placed on the external carotid artery. He had been desirous to be demonstrated the use of a copper strand as electrode in the treatment of cancer of the tongue. He was in a great hurry to be regarding the strength of the current.

trusted entirely to the sense of his patient. He found that he could not use more than eight or ten milliampères in the nose, and some patients complained of three milliampères.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of October 10, 1894.

The President, Dr. DE FOREST WILLARD, in the Chair.

(Concluded from page 763.)

Cases Illustrating the Operative Treatment of Iliac (Spinal) Abscesses.—Dr. JAMES K. YOUNG said that these cases illustrated the operative treatment of iliac abscesses of spinal origin, and stated that he was indebted for the histories of the cases to Dr. Joseph M. Spellissy, assistant surgeon in the Orthopædic Dispensary.

He had intended reporting a similar case which had occurred in private practice, in which Dr. Willard, Dr. Ashhurst, and himself had been associated. In this case it had been considered advisable to either trephine the upper part of the crest of the ilium or remove a portion with a rongeur forceps, so as to permit the drainage-tube to lie flat in the iliac fossa. The latter had been done, and had appeared to facilitate the drainage and healing of the abscesses rather than to retard them.

The frequency of these abscesses was well shown in Michel's statistics, in which out of forty-eight abscesses of spinal origin, thirty-nine, or seventy per cent., had been in the pelvis.

In regard to the treatment, the opinions of authorities ranged from extreme expectancy to early and radical operation. Two plans of treatment were offered: that of expectancy, and that of incision and drainage. Cases were recorded in which, under expectancy, recovery had ensued; notably one each of Dr. Taylor's and Dr. Bradford's and Dr. Lovett's, and the speaker had one now under observation in which absorption appeared to have occurred.

There were two other methods to which attention must be called: 1. Repeated aspiration. 2. Injection of fluids to promote absorption.

The former was unsatisfactory on account of the non-withdrawal of caseous clots, and the latter dangerous, and in some cases fatal, from the absorption of carbolic acid. The objections to the early radical operations, especially erosion of vertebrae, was the high mortality, and Dr. Rapprecht, of Dresden, had informed him six years ago that after a fair trial he had abandoned the radical operations, because fifty per cent. of the patients had died from the operation. The operation here advocated was performed under strict antiseptic precautions. The abscess was opened by careful dissection, it was thoroughly irrigated with boiled water and boric-acid solution, a long, grooved director was passed up to a point above the sacro-iliac juncture, and a straight, longitudinal incision was made upon it. A rubber tube was passed through and secured with safety pins. Emulsion of iodoform (ten-per-cent.) $\frac{3}{4}$ ss. was thrown in, iodoform gauze packed about the wound, and a bichloride dressing applied.

The indications for the operation were: 1. Where the abscess was large and making pressure upon important organs. 2. Where the abscess was increasing rapidly in size. 3. Where there was danger of rupture of the abscess into the peritoneal cavity.

Dr. WILLIAM J. TAYLOR thanked Dr. Young for presenting these cases himself. He had used this method of treatment several times in the last year with good results. There was one point to which he desired to call attention, and that was that instead of the curette he had used with advantage pieces of

foci in other parts of the body might be developed. Therefore, he believed in incision under thorough aseptic and antiseptic precautions, with thorough drainage and thorough curetting where it was possible. There was one caution to be observed when making through-and-through drainage—care should be exercised in the use of the curette on the peritoneal side of the abscess. The curette might cause little perforations, and then if, as was sometimes done, peroxide of hydrogen was injected, small quantities of pus might be forced through these openings.

These wounds could be kept aseptic; he knew of cases that had been discharging for months, yet the wound had been kept absolutely aseptic; but if a fresh suppurative process was ingrafted on these sinuses there would be a serious drain, and probably great danger to the patient. He was thoroughly satisfied with the operative treatment, not that it cured the original disease, but it relieved the drain on the patient, diminished the fever, and, if accompanied by proper fixation and by hygienic measures, permitted the patient to become hearty and strong, in place of the wretched, worn, exhausted individual which we so often saw as the result of poisoning from the absorption of tubercular pus.

Erasion of the vertebræ was a dangerous and also a difficult operation, and in the end the surgeon was never certain that he had eradicated the disease. That was the real objection to erosion. If we could be certain that we could remove all the disease, it would be worth all the time, trouble, and risk which were required to reach the source of trouble. He did not believe that there was any operator so adept as to be able to work entirely around in front of the body of the dorsal vertebræ. He certainly had never succeeded except in cases where there had been a large deposit of tubercular matter and where the body of the vertebræ had been broken down. In healthy dogs he had tried over and over after removing the head of a rib, but had never succeeded without getting into the pleural cavity. In one case where there had been a large tubercular mass in front of the vertebræ, pushing the pleura forward, he had been able to pass a loop of tubing entirely around.

Dr. Young said the conservative method was a well-accepted form of treatment. There were on record two well-authenticated cases in which recovery had followed where there had been large abscesses in this region, and the patients had refused operation. They were those of Dr. Taylor, of New York, and the case recorded by Dr. Bradford and Dr. Lovett. Two years later the abscesses had disappeared. He had now under observation a patient in whom there had been a large abscess which had now disappeared.

In speaking of rapid cures in these cases, he had been speaking as a surgeon in chronic cases. By "rapid cure" a chronic abscess would mean months.

Iliac Abscesses Non-spinal in Origin.—The PRESIDENT read a paper with this title in which he said that iliac abscesses arising from causes other than spinal caries were not infrequent. Accumulations of pus in this region should receive careful attention, as the prognosis would be greatly influenced by the source of the pus. He had seen a considerable number of these pus accumulations either from direct or indirect violence. In many instances the infection had been consequent on a fracture of the femur, was within the pelvis, during violent exertion in a football game, or the body, or from other possible causes. The abscess usually began as a pain in the groin, and in some cases of fracture the pain had lasted for months, and in one instance for a year, before any positive results had been obtained. In the majority of cases a rupture of the abscess had taken place, pus had been evacuated, suppuration followed, and the abscess slowly made its way downward toward Poupart's Ligament. There was usually slight flexion of the

leg, or at least an inclination to relieve the pain by relaxation of the tense sheath.

At the present day it was well to remember that an individual might have pain and inflammation even in the right iliac region without having appendicitis, and that a woman might have a pelvic abscess which was not due to tubal disease.

One case he recalled where a man had suffered for months and had become greatly emaciated and exhausted, presenting the appearance of tubercular disease, yet had been speedily and thoroughly cured by through-and-through drainage of a pus cavity in this region.

In another case the condition found had apparently been due to degeneration of the tissues from an attack of the grip. The patient had not been conscious of any injury having been received in this region, yet there had been a possible history of rupture of some of the fibers of the iliacus several months previous to an attack of influenza. When seen he had high temperature, chills, perspiration, etc., and had been in bed many weeks, suffering intensely with pain down the leg and in the hip. The hip had been partially flexed and adducted, but there had been no thickening about the trochanter or hip joint. The left iliac fossa had been firm and dense, and a large tumor had presented itself under Poupart's ligament extending down the vessels.

Two quarts of pus had been evacuated through an incision just below the anterior spinous process, and a tube had been carried back to a counter-opening made above the crest of the ilium. No bare bone had been discoverable, and all the symptoms of hip disease had been speedily relieved. There had been no evidence of spinal caries.

In another case the mass had been at first believed to have originated from an appendicitis, but this supposition had afterward been proved to be unfounded.

In another instance there had been deep-seated pain, emaciation, and so forth, indicating malignant disease. An incision had been decided upon with the result of obtaining a large amount of pus; successful recovery had ensued. In this case there had been no evidence at all of bone disease, and the result had justified the diagnosis.

The conditions with which these abscesses were most liable to be confounded were abscess from spinal caries, from hip disease, and from innominate disease. He had seen a number of cases of the latter complaint where the caries had been situated upon the inner side of the innominate bone, and in one instance the osteitis had been at the internal face of the sacro-iliac junction.

It was frequently difficult to decide in a case of bared iliac bone whether the bone lesion had been primary or whether it was a secondary result from maceration in the pus.

A careful history of each case was requisite in arriving at a conclusion, and in some instances a diagnosis was only possible after an incision. In spinal caries there would necessarily be rigidity of the back, but not necessarily pain nor even deformity. If there was vertebral osteitis there would usually be a history of "stiff back." Of course, if kyphosis was present, the diagnosis was easy.

A diagnosis from abscess from hip disease which had perforated the acetabulum was not always easy. There might be flexion of the hip; there might be adduction or abduction, and there would necessarily be rigidity with fixation, especially if tension was put upon the iliac muscle. To make a correct diagnosis required close attention to the whole group of symptoms. If a surgeon considered a single symptom rather than the group he would find it easy to confound these abscesses with any one of the conditions already mentioned.

The speaker had seen a number of cases of sarcoma in this

region, and in the early stage he did not believe that it was possible for any one to arrive at a positive diagnosis. The history might throw some light upon the subject, but, as many sarcomas were lighted into discoverable existence by injury, even this was of but little service.

Dr. M. PRICE said that some time ago, while in Muncie, he had conversed with a man who in early life had had hip disease. A few years ago a tumor had appeared on the previously diseased side, and he had come to Philadelphia and had been examined by a distinguished surgeon, who told him that he had tuberculosis, and that the result would be fatal, and nothing could be done. He had consulted others, but no one would operate. He had returned to his home, and spent three or four months in bed. He had insisted that the mass should be opened, but none of the local physicians would do it. Finally, he had taken a razor and cut in above Poupart's ligament, and at once a large quantity of pus had escaped. In six or eight weeks he had recovered, and had since remained well. He had no doubt that that had been an abscess of the character of which Dr. Willard had spoken. We should never turn away any of these cases without a thorough investigation.

Fifteen weeks ago he had fallen from a cherry tree, and a week later a tumor had developed in the splenic region. On examination the speaker thought that the patient had a splenic abscess. He had made a small incision, and two or three quarts of peritoneal fluid had escaped. The peritoneum had evidently been injured, and a localized peritoneal dropsy had been the result.

He had recently been asked by Dr. Keller to assist him in opening an abscess of the kidney. They had carefully cut down on the abscess, and had evacuated two or three quarts of pus. The finger could be passed over the crest of the ilium toward the psoas. The boy had made a good recovery. I had by accident been another case due to injury.

Dr. WILLIAM J. TAYLOR related a case bearing on this subject. An Italian while lifting a heavy weight had felt something give way in the right side. In two weeks a tumor had appeared midway between the anterior superior spine and the umbilicus. This had gradually increased in size. The speaker had seen him in concert three, and had come to the conclusion that it had been some thing of the kind. He had made an incision and found a very extensive abscess extending around toward the right kidney, but outside of the peritoneum, evidently a perinephritic abscess. With drainage he had recovered, the wound had healed nicely, and he had had no trouble for six months. Then one whole thing had occurred, and six weeks ago Dr. Taylor had again operated on the abscess in the same position. In three weeks it had recurred, enlarged, and he was ready to

Dr. H. A. Slocum recalled two patients who presented symptoms similar to those of the above. One was an English woman with a large cut in the left region the result of a stone cut in England four or five years ago. He had noted it in the present epidemic. The inflammation in this right arm and foot found evidence of the blood stagnation in the foot of the first, which showed that the second foot was connected with the system. In another case woman had many years' rheumatism for eight years, and at intervals the second condition, the symptoms which had generated themselves before epidemic might have been mistaken for those of this epidemic. The face, arms, and sometimes had forward a large tumor which had caused her difficulties, well three starting on her body in the left arm region. The symptoms had been found systematically and had been present. The patient was generally well, three years after epidemic.

Dr. JAMES M. BROWN recalled two cases from traumatism. The first case had been that of a man who, while supporting a heavy weight, had felt something give way in the left iliac region, incapacitating him for work for a few days. He afterward had been compelled to give up work, and in a few months an abscess had formed and opened above the crest of the ilium posteriorly. This man had refused operation and died with albuminuria. In the second case the man had fallen, striking the left lumbar region. Here the same course of events had followed with exception that the opening had occurred anteriorly and the man had recovered.

The PRESIDENT said that his object in calling attention to this group of cases had been simply to emphasize the fact that abscesses in this fossa might occur independent of spinal, lip, tubal, or appendiceal disease. These cases showed that abscess here was like other abscesses. He believed that pus in the body was harmful; if we could evacuate it safely we should do so, and as soon as it was probable that pus was present we should make an incision and explore. This prevented the abscess from extending and burrowing, and avoided the danger from high temperatures.

Pulmonary Calculus.—Dr. A. J. Downes exhibited a specimen, and related the case of a woman, eighty-nine years old, who, while eating breakfast on Saturday morning, September 20th, in her usual health, had suddenly been taken with a severe coughing spell. During the following few days she had had several similar spells. On Thursday, about 4 p.m., he had been present during the worst and last one. While listening to the chest during this attack he had found no air entering the left lung. The attack had ended with a copious discharge of muco purulent matter, slightly blood-tinged, which in striking the basin had given a sound. This had been the calculus which the speaker presented: quite too large, it would seem, to be cast up from the left bronchus, where it evidently had been. The patient had hardly coughed since, and had been entirely free from a bronchial irritation and expectoration she had suffered from for about fifteen years.

[illegible][illegible]

Dr. WILLIAM D. LUTCHER, JR., corresponding with KENNEDY, in fact being unknown, following information and find his name may not be the best name (LUTCHER) to have used in receipt of money. With no

the anterior nares and of stringy secretion in the nasal chambers which is either blown out anteriorly or drops back into the nasopharynx. Upon examination we find the turbinated bodies neither in a state of marked hypertrophy nor atrophy, but a condition somewhere between—from a previous hypertrophy resulting in a reduction in the size of the part from contraction of the newly formed connective tissue, thereby interfering with its secretory function, especially the serous fluid derived from the vascular plexuses, which have been bound down by the said contraction. These people would be comparatively free from annoyance in a humid climate, but not so in ours. Why? Because it is impossible for such nasal mucous membranes to throw out enough fluid to supply the inspired air with the proper amount of moisture. The tendency is for the surface of the mucous membrane to become dry; hence cell desquamation, formation of thick secretion, and scabs. As I saw the turbinated bodies building up under the vibratory massage, evidently from absorption of the connective tissue which had replaced the normal elements of the part and regeneration of the cellular elements and vascular plexuses, it occurred to me that in those cases of fibroid contraction from hypertrophy vibratory massage would be of special value.

I gave it an extended trial in a large number of just such cases, with most gratifying results in all, where the patients were willing to come regularly and submit to it.

The great objection to the method was that it was very tiring to the operator. I looked about to find an instrument that would relieve the method of this objectionable feature. Every instrument I could find was cumbersome, expensive, and did not reproduce the vibrations produced by hand.

One day, as I was using a nasal trephine, an idea struck me that the dental hand piece could be made a vehicle to attach a probe to, and the latter be made to vibrate by a shaft inserted into the hand piece fashioned after a trephine and made to carry a piece of leather that would flap against the probe as the shaft revolved.

The following diagram is a fairly good cut of the instrument, it being two thirds of the normal in size.

In explanation of it, the motor power is derived from an eighth horse-power electro-motor, to which is attached a White's dental shaft and hand piece. This part of it almost all rhinologists are supplied with to run trephines and burrs for removing septal excrescences and other purposes. To the hand piece is attached the probe carrier which slips over the hand piece by two rings and is held in place by thumb screws. The probe (which is of the regulation size recommended by Braun, made of copper and with a bulbous end) slips into a tube soldered to

operator in each case, by regulating the amount of the electrical current to the motor.

Pieces of leather can be kept on hand of different sizes, which fasten into the revolving shaft, whereby the force of the vibrations can be augmented or diminished at will. A piece of leather about three quarters of an inch square and about one millimetre in thickness I find to answer my purpose for general use best. A piece of russet leather (so popular now for shoes) I find to be of about the best stiffness.

It was my custom when using vibratory massage by hand to first use a probe carrying a thin winding of cotton dipped in a four-per-cent. solution of cocaine to render the nasal cavity tolerant to further massage, then to proceed with probes wound with cotton carrying whatever application was thought to be indicated.

With the intranasal vibrator I have found that the use of cocaine was unnecessary, as the vibrations were so gentle and regular that the patients rarely complained. The ease with which it can be accomplished makes it now a pleasure, whereas by hand it was extremely irksome. Further, the greater number of vibrations to the minute with the intranasal vibrator over those by hand has decreased the number of sittings required to almost one half.

It has not been my intention to enter into a report of the general technique of vibratory nasal massage, or to go into a general discussion of its merits or demerits. It has many advocates, and to those who have not used it I would say, do not condemn it until you have once given it a fair trial. If you want more knowledge on this subject I would refer you to an article of Braun's in the May, 1894, number of the *Journal of Laryngology, Rhinology, and Otology*, London.

It has simply been my desire to bring to the attention of those engaged in nasal work an instrument which I believe comes nearer to reproducing the hand vibrations than any other on the market. I desire to thank Mr. E. B. Meyrowitz, of New York, for the careful manner in which he has followed out my instructions as to its construction.

Miscellany.

The Dietary of the New York State Hospitals for the Insane.—About a year and a half ago Dr. Austin Flint, of New York, prepared a dietary for the hospitals at the request of the

commissioners in lunacy. He has lately, at the commissioners' request, revised it in the

light of reports from the various institutions based on a year's experience with it. On September 26, 1894, Dr. Flint wrote to the commissioners as follows:

"GENTLEMEN: I have received your communication inclosing reports from the State hospitals on the practical working of my suggestions on dietaries and food supplies dated June 29, 1893.

"These reports indicate that the supplies have been more than ample. In a general way, the results of full trial show that my report of June, 1893, needs but little revision, although it was intended to be to some extent experimental. If my suggestions had been carried out less literally while adhering to their spirit and general features, no revision would have been called for; however, it is fortunate that my report has been fol-



the two rings and held fast by another thumb screw. Introduced into the hand piece is a shaft which carries a piece of leather. As the shaft revolves the leather strikes against the probe during each revolution and causes it to vibrate. The vibrations are very gentle and even. Any number of vibrations can be obtained up to several thousand a minute, according to the capacity of the motor.

According to Braun, Fisher, Demme, Dronson, and others, the number of vibrations in an expert hand varies from four to six hundred a minute, and that these vibrations should be continuous. I believe that all concede that the greater number of vibrations to the minute the better the results obtained with the method. With my instrument a greater number of vibrations can be had, according to the judgment of the

lowed exactly in so many instances, as it enables me to revise my original recommendations and to now prepare schedules which may be regarded as final and likely to stand the test of further experience. I have, therefore, to suggest the following corrected schedules:

"DAILY RATION."

"Meat, with bone, including salted meats, fresh and salted fish, and poultry.....	12 oz.;
"Flour, to be used in making bread and in cooking (may in part be substituted [replaced] by corn meal and macaroni).....	12 "
"Potatoes.....	12 "
"Milk.....	16 "
"One egg.....	2 "
"Sugar.....	2 "
"Butter.....	2 "
"Cheese.....	1 "
"Rice, hominy, or oatmeal.....	14 "
"Beans or peas (dried).....	12 "
"Coffee (in the berry and roasted).....	1 "
"Tea (black).....	1 "

"In the purchase of beef, it is recommended that with each whole carcass purchased there be bought one fore quarter additional. This will give an extra quantity for soups and stews and provide additional roasting pieces for the officers' table. The clear meat of the parts that have been used in making soups may be served 'braized,' or otherwise prepared, from time to time. Though not so nutritious as when made of fresh meat, dishes prepared in this way may easily be made palatable, and would agreeably vary the diet, if not used too frequently. This recommendation is made to meet the satisfaction of the superintendent of the Middletown hospital. In the purchase of mutton, veal, pork, etc., it is recommended, as a matter of time economy as well as contributing to the proper quality of supplies, to buy whole carcasses, not the inferior parts only, which latter usually contain a large proportion of bone. With the different classes of persons to be provided for—physicians, attendants, workers and non-workers, male and female—nearly every part of an animal can be profitably and economically used. In the purchase of certain other articles, such as coffee and tea, inspection of quality is necessary, more if not positively harmful, take away from nutritive efficiency and are not in the line of true economy. Flour, milk, eggs, cheese, potatoes, beans, etc., take the place, to a certain extent, of other articles which are more costly. It requires but little experience to learn that the waste of flour, milk, etc., of poor quality, necessitates expense than the purchase of first-class articles.

"Some parts of a bullock contain only eight per cent. of bone, some parts contain fifty per cent. A high French authority (Péron) estimates that ordinary suppers of meat contain twenty per cent. of bone. The meat (bones) is considered, but variable quantity of fat. Veal should never be supplied unless it is of the best quality. The same remark applies to fresh pork. A good side of bacon should weigh about 100 pounds. A young hog, when dressed, should weigh 150 or 160 pounds. A dressed whole lamb should weigh 60 to 100 pounds. A dressed whole chicken should weigh 4 to 6 pounds. The fore quarters weigh 100 to 120 pounds, and the hind quarters 140 to 150 pounds. About fifteen per cent. may be allowed for salt pork, salted meats, etc. One of the most important in hospital cooking is that inferior parts of carcasses may be utilized in the making of soups, trifles, casseroles, etc., which will take the place, to a great extent, of more costly articles and give more satisfaction to patients. Vegetable supplies may be largely made with advantage.

"One hundred pounds of flour will make one hundred and thirty-six pounds of good bread. Corn meal may be substituted for flour, but to a limited extent, as it is less nutritious and often disturbs digestion. Macaroni may be substituted for flour, but only as an occasional luxury. Bread should be made every day, and what is left over should be used in cooking and not be served again. If bread is made during the night and the baking finished as early as 3 A. M., it may be served the same day. If to be served the next day, it should be baked as late as practicable in the afternoon or evening. If bread is simply warmed through in the oven immediately before serving, the moisture absorbed by the gluten is driven off, and the bread is much more palatable and digestible; but bread should never be dried in this way more than once.

"The use of fresh vegetables in season will permit a suspension or reduction of the rations of rice, beans, and peas, with some reduction in the ration of potatoes. Fresh vegetables and fruits should be used freely. Onions should be used freely in cooking and should be served occasionally as a separate dish. I have long observed that onions are craved by inmates of hospitals. Turnips, parsnips, salsify, carrots, and beets may not strictly be classed as fresh vegetables, but they may be frequently used with advantage.

"In the revised ration I have recommended five sixths of an ounce of roasted coffee instead of an ounce of green coffee, assuming that coffee, properly roasted, loses about sixteen per cent. in weight. Coffee can be better and more uniformly roasted in large quantities and by experts than in a hospital. The coffee should be very finely ground before making the infusion.

"The ration does not include condiments and other flavoring articles, syrup, molasses, preserves, and compotes, such as apple sauce, apple butter, etc., which should be provided as occasion offers.

"If men and women are supplied in separate tables it will be convenient to make up the supplies for each from this daily ration. Five per cent. may be added for men and deducted for women, making a difference of ten per cent. For workers, an addition of twenty-five per cent. may be made to the rations of meat, flour, and potatoes.

"The modifications which have been made in the 'daily ration' are the following:

"Flour has been reduced from sixteen ounces to twelve ounces. The superintendent of the Binghamton hospital says that the dietary is 'more than sufficient to meet the general requirements of the patients in a hospital of this kind.' The superintendent of the St. Vincent Hospital, New York, gives 100 pounds of flour and an ounce and five sixteenths of corn meal instead of sixteen ounces of flour. The superintendent of the Middletown Hospital has reduced the amount of flour (baked) from sixteen ounces.

"Potatoes have been reduced from sixteen pounds to twelve pounds. The superintendent of the Middletown Hospital recommends that the ration of potatoes be reduced. The superintendent of the St. Vincent Hospital, New York, gives 100 pounds of potatoes for twenty patients.

"Veal has been changed. It is recommended that the fore quarters of one heifer, from hospital and the hind quarters of the same animal, be used. The superintendent of the Middletown hospital recommends that the ration of milk be increased four times.

"The ration of sugar has been reduced from 200 to 100 pounds. The superintendent of the Binghamton hospital says that the ration of sugar should be reduced. The superintendent of the St. Vincent Hospital, New York, gives 100 pounds of sugar for twenty patients.

"The ration of animal fat has been reduced from 100 to 50 pounds. The superintendent of the Binghamton hospital says that the ration of animal fat should be reduced.

tients. I suggest that cheese be made interchangeable with butter."

A Case of Death from Cholera contracted at a Laboratory.—The *Union médicale* for November 22d says that an assistant at the Hamburg Hygienic Institute died recently after an attack of cholera. After a premonitory diarrhœa which lasted a few days, asphyctic cholera accompanied by intense muscular cramps set in. There was moderate cyanosis, and the temperature varied from 95.7° to 98.4° F. Although the case appeared to be one of moderate intensity, all therapeutic measures were without effect; in spite of the injections given from the second day no reaction occurred and coma gradually set in. Characteristic bacilli were observed every day in the dejecta.

It is not possible to state exactly the manner of infection. The victim had worked constantly at the laboratory on the cholera vibrio, but he had not recently made any experiments on himself with that microbe. It is thought that infection may have occurred by suction while using a pipette containing water which had been brought from Thorn, and that a certain quantity of it had been received into his mouth. A bacteriological examination of the water, subsequently made, was negative.

The Festival of Saint Luke.—The *Journal des sciences médicales de Lille* for November 3d contains an account of a recent celebration by the members of the *Société Saint-Luc, Saint-Côme et Saint-Damien* in honor of their patron saint. The instructors and students present at Lille united their prayers for the repose of the souls of their deceased fellow-members, for the relief of the sick, and for the continued prosperity of their own work. The Committee of Paris in connection with many provincial delegates celebrated their annual festival in the Church of Montmartre. Monseigneur d'Hulst officiated and delivered an excellent address on the social rôle of the Christian physician. Never, says the writer, has such a large reunion taken place, and, according to the Committee of Paris, Lille sent the largest number of delegates. M. Dauchez, the secretary-general, in his report, gave a *résumé* of the various works presented during the year and a history of the society. After the report a discussion took place on the practicability of creating a special bulletin for the society, and a vote was taken in favor of it, so that it is probable that before long the *Publication de la Société Saint-Luc, Saint-Côme et Saint-Damien* will be issued. The greatest cordiality existed at the meeting, and the fellow-members of Lille, says the writer, may congratulate themselves on the interest shown in their work by the physicians, who were profoundly grateful, and would endeavor, for their part, to extend the work of the *Société Saint-Luc, Saint-Côme et Saint-Damien*.

The Influence of Satiation and of Fasting on the Rapidity of the Absorption of some Medicinal Substances in the Stomach and on their Excretion in Healthy Persons.—The *Revue pharmaceutique de médecine et de chirurgie pratiques* for November contains an abstract of an article published by M. E. P. Mouton in *Travail*, No. 37, 1904. At the present time several authorities are of opinion that the action has no influence on the absorption of drugs, while others maintain that it does. The author has made a series of experiments with potassium iodide and sodium salicylate in doses of four grains each, and in the results obtained he is inclined to the absorption of these substances. In the empty stomach he was supplied with the means as observed when the stomach is in a condition of repletion, the absorption being then supposed to be delayed. 1. When in the first case the results differ but slightly, not only in the same person, but in different persons, in the second case there is a marked difference in the duration of the absorption, in a full stomach it being not only by the delayed reaction of the

medicaments (in the saliva and in the urine), but also by a greater lapse of time between the beginning and the height of the reaction. 4. The reverse is observed when the stomach is in a condition of emptiness. 5. The potassium iodide appears either at the same time in the saliva and in the urine or from three to five minutes sooner in the former. 6. The latter circumstance probably depends on the unequal activity of the kidneys in different persons. 7. The sodium salicylate can not be detected in the saliva with iron perchloride. 8. The excretion of the medicaments is in proportion to the rapidity of their absorption. 9. The excretion of potassium iodide stops simultaneously in the saliva and in the urine. 10. The definitive elimination of the medicaments presents, in general, rather wide fluctuations. 11. The diminution of the absorption of the medicaments in a stomach full of food results from their mechanical mixture with the latter—which separates them from the walls of the stomach—and not from the afflux of blood exaggerated during digestion in this organ and from the increase of the blood pressure.

The Infectiousness of Whooping-cough.—At a recent meeting of the *Congrès de médecine interne*, held at Lyons, a report of which appeared in the *Journal de clinique et de thérapeutique infantiles* for November 22d, M. Weill stated that twenty-nine children suffering with whooping-cough had been placed in a ward in one of the hospitals with a hundred and twenty-three others, and not one of the latter had taken the disease. Twenty days had been the minimum time of their stay in the ward. All children over seven years of age had been left out of account, also those who remained in bed while in the hospital, leaving only those who were likely to take the disease, but no infection had resulted. While M. Weill thought that no positive conclusion could be reached from these facts, yet, he said, if whooping cough was infectious in the city and not in the hospital it was because different conditions existed. The most striking feature in this case was that the children who had been received at the hospital were in the last stages of the disease; in the city, on the contrary, contact with children suffering with whooping-cough occurred in the beginning, at a time when a diagnosis could not be made. This fact, he thought, should lead to new researches.

M. Moussois, of Bordeaux, stated that his service among those with whooping-cough was isolated, although it was evident that there had often been contact with other patients; nevertheless, he had never observed any infection. This, he thought, corroborated M. Weill's researches.

The New York Academy of Medicine.—At the last regular meeting, on Thursday evening, the 20th inst., a paper entitled *The Influence of the Bicycle in Health and in Disease* was to be read by Dr. Græme M. Hammond.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 24th inst., the following cases will be presented: Fibroma of the Nasal Fossa, by Dr. C. H. Knight; Nasal Osteoma, by Dr. C. G. Coakley; Exfoliation of Cartilage during the Treatment of Laryngeal Tuberculosis, by Dr. J. W. Gleitsmann. Dr. F. E. Hopkins will read a paper entitled *The Recurrence of Lymphoid Hypertrophy in the Nasopharynx*. There will be an exhibition of instruments and apparatuses.

At the next meeting of the Section in Obstetrics and Gynecology, on Thursday evening, the 27th inst., the following papers will be read: *Studies in Pelves, Pelvimeters, and Pelvimetry*, by Dr. Melchior A. Harris; *Symphysiotomy in a Tenement House, with a Report of a Case*, by Dr. H. L. Collyer. There will be an exhibition of specimens and instruments, also reports of cases.

Original Communications.

TREPHINING.

A REPORT AND STUDY OF TEN CASES.*

BY JOHN FRANCIS BURNS, M.D.

BY JOHN FRANCIS DUFFY, M.D.,
VISITING SURGEON TO ST. JOHN'S HOSPITAL, LONG ISLAND CITY, N. Y.

CASE I. *Slight Osteitis of the Right Frontal Bone, followed by Abscess of Bone*.—I was called upon to treat a man, aged thirty-five years, some five years ago. He was in a semi-comatose condition, with partial paralysis and anaesthesia of the left side of his body and right side of face. Pulse 70, unequal pupils, and temperature of 99°. After twenty-four hours, during which I made several examinations, I associated his condition with a recent scar which presented slightly to the right of the dividing line of the forehead, midway between the orbital ridge and the union of the frontal and parietal bones of the same side.

Not having any history and the man being unable to give any account of himself, I was forced to send for one of his family, when the following history was obtained:

family, when the following history was obtained:

The man had been struck with a hammer over the ear mentioned some six weeks previously. He was taken to Roosevelt Hospital in an ambulance, his wounds dressed, and he subsequently became an out patient, continuing in his attendance for about two weeks, when the wound healed perfectly and he was considered well. About ten days after the infliction of the injury, however, he began to act queerly, and had some chills and high temperature. His mental state was peculiar; at times he was a little flighty and again somewhat stupid, but his mental excitability and peculiarities became intensified and persistent. He was then taken to Bellevue Hospital, remaining in the alcohol wards for one week, and then discharged with the advice to his friends that "he would be all right," and that "his condition was due to chronic alcoholism." This history, with the accompanying symptoms, convinced me that the man had an abscess of the brain in the frontal lobe of the right side, with pressure downward and backward on the motor tracts of the internal capsule. Consultation with two other physicians tended to confirm this view, and by their advice I engaged in consultation an eminent surgeon. The surgeon agreed with me in the diagnosis, but advised the ending of an eminent neurologist, who persisted in looking at the case as one of extracranial hemorrhage, with pressure corresponding, "to over the motor areas"; the neurologist's opinion was given the greatest weight, and the operation undertaken on basis laid down by him. We found no extracranial hemorrhage, nor fluid of any kind extracranially, so the opening was continued downward and forward toward the point at which we expected to find the abscess, and the abscess itself was found, and removed. The patient recovered, and was discharged. The patient died of pneumonia, and the abscess was not found. The patient died of pneumonia, and the abscess was not found. The patient died of pneumonia, and the abscess was not found.

tissue mentioned and a distinct abscess capsule, and that the abscess was confined entirely to the frontal lobe of the right side, the motor symptoms being evidently from late pressure.

This case illustrates many points and is very instructive:

1. It illustrates the frequency with which cases of this kind have been overlooked as to their surgical significance, for this man undoubtedly came under the observation of some very good diagnosticians during his illness. I doubt if his actual condition would go unrecognized or be at least unsuspected for such a long period to-day.

2. It illustrates the extreme conservatism which actuated medical and surgical men of eminence at so recent a period as five years ago in this department of surgery, and brings to light forcibly the lack of exact knowledge concerning these conditions that existed then—that is, both as to the lesions existing under given conditions and the localization of the same when the lesion was acknowledged.

3. It illustrates very forcibly the importance that the period of time elapsing between the infliction of the injury and the occurrence of the compression symptoms plays in formulating an opinion as to the character of the lesion to be dealt with. There is no doubt in my mind that if this man had been operated upon sooner, and especially if the trephining had been done immediately over or near the site of the scar, his chances would have been better; in other words, there would seem to be cases such as the above where focalization alone should not guide us, as the shock of the operation is much increased thereby and the chances of success are lessened. If the pressure symptoms progress continuously and in regular sequence, a point midway between two extremes would probably be the safest and best place to choose for the trephine.

By contrasting this case with No. 10 of this series many of these points will be differentiated in connection with hemorrhage.

[illegible]

* Read by correspondence the Medical Society of the County of Gloucester at the professional meeting, October 21, 1904.

and his condition became critical, pulse slow, respirations slow and irregular, and very hard to rouse. As I had seemingly relieved the cause of possible disturbance to this man's brain I was at a loss to account for his condition, especially so as the pus had ceased and the cellular infiltration and chemosis had entirely disappeared; the wound was perfectly healthy-looking and almost healed. Thinking possibly that the blood which I had seen over the dura might in some wise be responsible (there being no sign of the retention of pus), I opened the wound afresh, and was surprised to find that the thin layer of clotted, dried blood had been absorbed and I could see the dura plainly. The man was now in a dying condition and paralysis coming on. Remembering the former case, I decided to introduce a grooved director into his brain. I did so, and the pus immediately spouted out through the small opening. I then introduced a pair of dressing forceps, enlarged the wound in the dura, washed it out with Thiersch's solution, introduced a quarter-inch rubber tube, and dressed antiseptically. The man sat up in bed and ate a light breakfast the next morning, and made a speedy and uncomplicated recovery. I meet him quite frequently in the streets and he seems well and hearty, and so expresses himself.

This case again illustrates many interesting points in head injuries:

1. It illustrates the danger of overlooking such injuries where we have to deal with other grave injuries in the same person. It also illustrates what has often impressed me before—viz., the importance of chemosis of the ocular conjunctiva as a frequent symptom in fracture of the orbital region; not that it is necessarily a sign of grave fracture or that any great harm will ensue, but I would be very cautious, even where the history given is of slight injury, in making a diagnosis, or especially in treating such a condition lightly. When we reflect how numerous and fragile are the bones entering into the formation of the orbital cavity, it is easy to imagine how often they may be fractured and yet escape detection, and thus prove a source of subsequent mischief.

2. It illustrates the necessity of being prepared for secondary or even tertiary operation in cases such as the above, otherwise death will almost surely follow. I do not know whether my course concerning the clotted blood was the best, but considering all the circumstances I think now, as I did then, that it was. If the man had not had an abscess, he would have been all right, as my second examination showed. If the operation had been an immediate one there would be no question as to its removal, but with the present opinion as to the tendency of dried blood to become contaminated in the presence of pus, I perhaps did the best thing possible.

Taken together, these two cases illustrate:

1. The frequency with which frontal injuries are followed by abscesses, the extent of damage from which frequently give rise to death in the region.

It is a great mistake to suppose that the indication of the injury and the appearance of the wound are any more than a guide to the surgeon in such cases. Also the presence of a sufficient quantity of pus, which is established in other cases, is not a sufficient indication of a severe condition. No suppurative abscess is a sign of a severe condition, and a severe condition is not a sign of a suppurative abscess.

CASE III. Compound Comminuted Depressed Fracture of Skull.—A boy, aged ten years, was struck by a locomotive at a grade crossing. He did not appear to be hurt very much at first, save for a scalp wound. His physician was, however, again summoned some time after the accident on account of the boy lapsing into coma with paralysis on one side. Consultation determined his removal to St. John's, where I saw him at midnight of the day of the accident. On the train, and until the boy reached Long Island City, he remained comatose and paralyzed, but when I saw him he was lively enough, resisting vigorously all my efforts to examine his wound. Putting the boy under ether and enlarging the scalp wound, I found that he had a depressed comminuted fracture of the skull over the motor region. A piece of the outer table, the size of a silver dollar, was uniformly depressed; in addition there was a fissured shelving fracture running back from this and including the inner table of the skull and resting on the brain. I trephined the boy, elevating the circular depression and removing the splintered fragments from the depressed shelving portion. The boy made an uninterrupted and uncomplicated recovery. I am indebted to Dr. Frank Valentine, of Brooklyn, for kind advice and counsel on this case.

This case is very interesting for many reasons:

1. It illustrates the fact that a typical multiple depressed fracture of the skull may exist, coupled with a depressed circular one, and yet great difficulty be experienced in the diagnosis. Three experienced physicians besides myself saw this case, and yet could not make the diagnosis save from the symptoms. The minute the boy was placed under ether I was enabled to make the diagnosis with ease and accuracy.

2. The case is a very interesting one from the fact that the boy's coma and paralysis did not present at once, and did not persist when once present. Practitioners often meet cases of convulsion and temporary paralysis in young children after falls without any permanent results and evidently without grave injury. Yet one must be on the lookout for cases of depression such as the above.

3. It certainly illustrates that in all cases of scalp wound coupled with a history of severe traumatism thorough examination is imperatively demanded at whatever cost. Foreign bodies are apt also to be lodged deeply in the wound, particularly in railroad cases, where the particles from the roadbed surely find entrance and prove a source of septic inflammation and irritation, thereby increasing the danger to the patient materially.

CASE IV. Compound Comminuted Depressed Fracture of the Skull; Extradural Hemorrhage.—A policeman in the discharge of his duty struck a man on the head with his night stick, thereby smashing the whole of one side of the vault of the cranium. The fracture was multiple in all directions, with extensive depression. The man was in a very weak condition, but I trephined in two places at the top and bottom of the fractured areas. I found the whole of the extradural space filled with recently clotted blood, which I broke down and washed away; raised depressions, stopped the bleeding, established drainage, and dressed antiseptically. The man made a speedy and uninterrupted recovery. I am indebted to Dr. R. G. Strong, of this city, for valuable advice on this case.

This case illustrates one of many frequently found in practice and which are often allowed to proceed without

operative interference. It also illustrates the extensive damage that may be done to the tables of the skull and yet the parts be restored, as well as the health and usefulness of the individual.

It also illustrates the importance of trephining in these very cases, if for no other reason than the removal of the clots which form between the dura and the skull, as well evidently from the vessels in the diploic portion of the depressed areas (which are sunken enough to allow ready flow in, yet none out) as from the branches of the middle meningeal, as usually taught.

CASE V. Bullet Wound of Brain traversing the Frontal Middle Cerebral Region Obliquely.—I report here briefly the case of a young man who shot himself in the left temple. The bullet entered the brain for some distance. I trephined and searched for the bullet, but did not find it. I removed the fragments of bone driven before it, however, as well as some clotted blood, established drainage, and the boy made a speedy and perfect recovery. I am indebted to Dr. P. H. Bunister of this city for advice and counsel in this case. This case I have reported more freely from a medico-legal sense in the *New York Medical Journal* for June 30, 1894.

When I trephined, my anxiety was for the bullet; but, like many other bullet wounds, the bullet was the least dangerous element present. When we stop to consider the danger of necrosis of the bony fragments, I do not believe we will hesitate to try and remove the same by operation, thereby also increasing drainage and permitting attempts at the stoppage of hemorrhage.*

CASE VI. Punctured Fracture of the Skull. I was called in consultation with Dr. McFarlane to see a girl, aged nineteen years, who had had a piece of thick plate glass fall from a distance on her head. We found on examination that a piece of the glass, about an inch and a half long, had penetrated her skull and was broken off flush with the outer table. I recommended her removal to the hospital for operation, and Dr. McDonald, the house surgeon, Dr. McFarlane, and myself, trephined her that same afternoon. The glass, even after the trephining operation had been made and good exposure obtained thereby, was so firmly imbedded that it was very hard to dislodge, and the patient had had already begun to vomit. The girl made a speedy and unimpaired recovery.

This is a very interesting case from many standpoints, and I suppose it is properly classed under the head of a punctured fracture of skull, and I think it was successfully an operative case. Many other authorities are of opinion that for the same reason, but certainly the same result, as in trephining. The literature in this class of cases is so extensive that I cannot here attempt to do more than to extract the article without trephining (cleansing the best way possible) and then resting in Nature's very good. The danger, however, in this case, from a punctured fracture of bone hidden beneath, leading to death and more illness, with consequent deformities, as of 1850, are obviated by primary trephining.

CASE VII. Abscess of the Brain. I have seen a case of an abscess of the brain, in which the abscess was found to be situated in the middle of the brain, and the abscess was found to be situated in the middle of the brain, and the abscess was found to be situated in the middle of the brain.

Examination by Dr. McDonald, at St. John's Hospital, revealed a circular depressed fracture of the skull, and a finger end could be introduced. Trephining fully confirmed this diagnosis, and showed splintering of the inner table of the skull, with slight laceration of the dura and meningeal vessels. The boy made a speedy and uncomplicated recovery.

This case was puzzling to me for a while, from the fact that the patient insisted that the injury had been caused by an ordinary beer glass thrown at him without cause. This was proved false at the trial, reputable witnesses testifying that the patient was thrown by the bartender after he had attempted an assault on him (the bartender) with a can which he carried. This illustrates what little reliance can be placed on the statements of people injured in this way. An example more convincing will be found in a case I reported for the *New York Medical Journal*, June 30, 1894.

Taken together, these three cases illustrate the almost positive indications for operation, as the inner table is usually comminuted. I am enabled to present to your honorable society the skull of such a patient in which Nature has partially effected a cure. The study of the specimen illustrates far more than can any words of mine the necessity for operation in this class of cases.

CASE VIII. Epilepsy following Injury of the Brain.—A man of forty years presented himself to me, requesting operative relief for epilepsy. Some seven years previously he had been caught in a factory belting and hurled against a ceiling, sustaining extensive injuries, including fracture of the skull. His family history for two generations is excellent, and he never had epilepsy until three years after the accident. The attacks have been occurring nearer together until he can not work, owing to their constant occurrence. His mental state is very bad; he dreads insanity, prefers death, contemplates suicide, etc. His hearing and sight are very bad, attributed to the same cause. His epilepsy is of a peculiar character, accompanied by immoderate laughter and a tendency to run violently forward. I placed him under ether to make an exploratory operation of the skull. Finding a piece of the skull that seemed depressed slightly, I trephined there with good results in some and hearing, and the fits subsided with their peculiar characteristics, after four weeks.

This case illustrates the result of neglect in treatment in cases such as those here described, and is only one of a number I may have quoted. It also illustrates the temporary relief afforded by the removal of only a three quarter inch button of bone. The relief afforded to this man and his symptoms can not be described; it tends to be interpreted that it should not be permanent. I hope to operate on this man again, however, as I suspect he has larger and more serious lesions in the occipital region, including possibly the cerebellum. I am now making the dissection in his case, as he died in forty days. I think it goes to show repeated skull operations may not be large and dangerous, in cases of long standing.

CASE IX. Chronic Epilepsy. *Abstract of the Case History.*—A patient of the St. Andrew's Hospital, Glasgow, who had been suffering from epilepsy for many years, and who had been treated by various means, including the use of bromide of potassium, and who had been treated by various means, including the use of bromide of potassium, and who had been treated by various means, including the use of bromide of potassium.

* I am sure by trephining, and not by any other means, that good results can be obtained in this class of cases.

was thought that surgery might aid him. Deeming that the conclusions of the physicians might be right, and the man being evidently destined to die shortly if unoperated upon, I trephined. Beyond uniform bulging of the brain and an excessive œdema of the membranes, I found nothing to indicate a tumor of the cortical area, having made a digital examination of that side of the brain in all directions. The man died the following day, and an autopsy was made with the following results: Brain uniformly soft, and membranous vessels hyperæmic. No fluid in the ventricles or their connecting passages. No localized areas of yellow or other softening, although cortical parts seemed softer. No hemorrhages. I systematically examined the pons, the cerebellum, the medulla, the internal capsule, and the external convolution and fissures for any tumors, growths, or ruptures without success. The pia mater covering the pons and medulla oblongata was thickened to a bony consistence, and the vertebral and basilar arteries thickened in atheromatous plates.

This case is very interesting from the fact that it illustrates the difficulty of diagnosis in such cases. Personally I thought the case before operation to be one of decussating paralysis with some tumor of the pons and medulla, but the weight of opinion was against me from focalization, and I must admit justly so, yet the autopsy would serve to show that my inference was nearly a correct one. The condition could probably be accounted for by cerebral softening involving the motor area, yet there was nothing especially characteristic of this found on autopsy; or, on the other hand, by pressure on the pons and medulla as the cause of the paralysis and general cerebral softening as the cause of the general symptoms. I am not qualified to settle this question, but simply state the facts as a contribution to the subject.

CASE X. Fracture of Base, Rupture of Middle Cerebral Artery, with Intracerebral Hemorrhage, and Laceration of Brain.—A vigorous man, aged twenty-seven years, was accidentally thrown backward from the rear step of a trolley car to the pavement, striking the back of his skull.

He was brought to St. John's Hospital, where Dr. McDonald made a diagnosis of fracture of the base of the skull. He had unequally alternating pupils, was bleeding from the nose and ears, and œdema of the lungs, and was in general collapse. No external evidence of fracture of the skull, nor, in fact, any bruising or swelling could be discovered, although bystanders stated that they heard a small crack at the moment of accident. The man partially rallied from his unconsciousness the following day, but was very irritable and delirious. About the fourth day he again became more lethargic, and symptoms of commencing death. On the morning of the fifth day slight pupillary dilatation was noticed. An additional entrance of blood had occurred, causing a large intracerebral hemorrhage, and moderate depression and rigidity of the neck. On the evening of the fifth day he expired, whereupon I trephined the skull and found a fracture of the base of the skull, and a large intracerebral hemorrhage, and found that there was a rupture of the middle cerebral artery, and that there was a laceration of the brain tissue, and a fracture of the base of the skull. I washed the wound with alcohol, and then closed the wound.

DISCUSSION.—The case of this patient is a very interesting one, and it is one of the most interesting cases of this kind that I have ever seen. It is a case of a fracture of the base of the skull, and a rupture of the middle cerebral artery, and a laceration of the brain tissue, and a fracture of the base of the skull. The case is very interesting, and it is one of the most interesting cases of this kind that I have ever seen.

and found clinging to the membrane. There was a fracture of the base of the right side, beginning at the superior border of the occipital bone, extending downward over the petrous portion of the temporal, then irregularly through the sphenoid and ethmoid bones. I am indebted to Dr. John Byrne, of Brooklyn, the consulting surgeon at St. John's, for valuable advice and counsel on this case.

This case is a very interesting one and illustrates many points.

1. It shows how important the occurrence of a period of consciousness and a subsequent relapse into unconsciousness is in the formulation of the diagnosis in such cases. Contrast with Cases I and II for abscess.

2. It shows how extreme can be the damage in such cases without any visible external evidence save the general symptoms.

3. How the brain can be lacerated and torn at points remote from the site of the infliction of the injury, and how this increases the difficulty in diagnosis when later operative measures are being considered.

4. It brings up the question whether it would not be wise to operate in such cases at once if the shock be not too profound—for how else can the products of the injury be removed? These cases are unfavorable at best, and will tax the judgment of the attendant severely.

5. The persistent bleeding from the right ear impressed me as to the exact nature of the case long before the focal symptoms manifested themselves. It is also interesting to note that the blood clotted hardest and symptoms manifested themselves earliest at a point remote from the injury—that is, at the vertex over the leg center.

6. In this case I believe the actual damage was done to the brain by the fragments involved in the broken base, although at the autopsy they were found perfectly approximated.

I will briefly mention some technical points that impressed me in the performance of these operations and which may be of service to others having similar work to do.

The extreme blood supply of the scalp, although it favors repair, renders the parts very sensitive to examination. Fractures and depressions may be some little distance away from the wound, and with a history of severe traumatism examination under an anæsthetic is imperative.

In four of these cases in which recovery occurred the patients were under the influence of alcohol when injured, and no complications ensued. Personally, I think alcoholic cases most often require operation, for when they are neglected complications are more liable to follow. I would also state that in these cases I have given alcohol moderately for several days after the operation.

It is hard to stop the extensive bleeding from the scalp in certain situations by forceps to individual vessels. It is better to clamp the whole back of the scalp at several points, and by the time you have removed the button there will be little bleeding. One objection to the plan is that the scalp being very thick, when the forceps lock tightly and have, as they usually do, corrugated blades, they injure the scalp severely, and this is a source of danger, I

believe. I think spring catch clothespins, if available and clean, would answer the purpose better, although I have never tried them. Certainly anything that mangles the tissues is a source of danger.

Watch the urine of patient when unconscious, and have it drawn every six hours. This is more apt to be overlooked than some more formidable complication, yet it is very important.

It is recommended to operate with the patient in a semi-supine posture. This is all right if you have plenty of assistance and an adjustable table. For ordinary operators it is better to have the head on the table, and if a little care is taken the extra blood flow will not be so great. One can also avoid many of the larger veins of the scalp by making the flap with discretion and a view to their avoidance.

The dura is recommended to be taken up by a toothed forceps. This I have found hard to do; but careful incision here is not so difficult nor seemingly as dangerous as into the peritoneum in abdominal operations, nor into the sac of a hernia, for instance. A good way to do is to make a slight nick in the dura with a knife, then carefully force some small, semi blunt instrument through—a grooved director, for instance.

It is recommended to make and elevate a flap of perosteum from the skull equal to the skin and fascia flap and raise it with them. This is easy of accomplishment where the skull is smooth, but where rough or ridged often impossible. Hence time is lost in attempting it in some situations, as it becomes frayed and ragged and only suffers necrosis afterward. The unevenness of the skull will in many instances increase the difficulty of starting the trephine. On smooth, even surfaces all will be easy. This applies to a three quarter-inch crown trephine, and the difficulty would naturally be increased with a larger size. An unfilied trephine will also keep one back some; but I have operated on nine cases successively without refiling. Patience is necessary. If the trephine works poorly, it is more apt to be due to one of these causes, or to permitted wobbling of the patient's head by the holder of the same, than to any fault of the operator.

I have found the characteristic cracking sound mentioned to be the nearest test as to when the trephine has penetrated deep enough. By making a little lateral pressure on the trephine after it enters the diploic tissue this sound can usually be secured. I have worked with a three quarter inch trephine and enlarged with an ordinary rongeur. I think it would be well to have also an inch and a half trephine, but when not at hand the condition is enough for all purposes with the aid of the rongeur. The judgment of the operator will decide which of the two trephines shall be used when two are available; it would be necessary indeed to make the inch and a half one a ready hand where a three quarter inch one would be. As in doubt I stick to better so than I can trephine, make an assistant, and arrange it so you see the right side of the trephine as it passes the point of payment directly. The point of the trephine has been a source of difficulty with me, especially at the base, so when the skull has been opened I found, however, that I could have had it well attended

by not attempting to use the pin, but by gradually working a groove by rotation of the trephine. Do not forget when using the trephine to lift the pin after the establishment of the groove; it may serve to do damage, although in one case where I neglected this precaution all went well, and the pin saved me the trouble of an elevator, as the button of bone came away with it when I raised the trephine to examine the depth of the tract. I have used no bone brush; I simply wash away the bone dust with an irrigation of warm water. A bone brush is apt to be dirty unless you use a new one each time. I suppose a wire one might be kept clean and be very useful, but I have never tried it.

Do not use strong bichloride solution in the dressings, as it will almost surely blister the shaved scalp. Do not be surprised at quite a little discharge on the dressings after several dressings, as some portion of the edges of the opening in the bone must be denuded of periosteum and hence liable to discharge some. Usually I have dressed the wound every second day for a week, then every three days for several weeks. I have shaved the entire scalp when opportunity offered, but in other emergency cases have simply shaved the region to be operated upon. A little care will keep the field clean, especially if one does not use too many instruments. It is to my mind better to operate on a partially shaved scalp when indicated than not at all. When a patient is delirious it is very hard to shave his scalp entire, as any one can testify who has tried. When patients are very weak the extra time necessary to shave the head completely and while under ether is of very grave importance to them. It is better to shave the entire head when the judgment of the operator indicates that it can be done without much additional danger to the patient.

I have found it very hard to mark out the site for operating on skulls with pins and nails as recommended. I have tried cutting at the apex of two oval flaps first, then inserting the nail and completing the flaps, but the nails usually fall out. If this happens the number of small bleeding points on the bone will confuse one, as any one of them may be taken for the point that the pin seemed to mark. Semi oval flaps seem to me to be the best, for you never know which way the bone is curved, and you can bring the flaps into their original position after the bone has been exposed, and estimate the place for the insertion of the pin very nicely. A little above the center of the temporal ridge and on a line over the top of the ear will yield a fairly good opening for the kind of work for the entire area of the brain. Flaps from the middle forehead are useful, so much so that one may suppose, too often one is misled and deceptive; dropping a line at right angles from an imaginary line passing through the center of the nose may be all right, but there you get a line yellow and red with blood to mark a place very much removed from the point of the most kind for the operation. The measurements for flaps are done in the back of the head; the second point and joining flaps are done. I have found it to be the safest, although he said it is not always found on the middle straight line, and I have found

the cerebral by the simple measurement of the eye. Any kind of a flap seems to heal nicely, and going down too near to the top of the ear for a flap increases hemorrhage. I prefer to leave the flaps fairly well opened until several dressings, as then in case of complication you will not be tortured with thoughts of what is going on within, but can see. This was well illustrated in Case II. The flaps will readily heal together even after many days' separation.

I have trephined immediately over branches of the middle meningeal arteries three times without any bad result, and tied them off in the dura when necessary. This presents no particular difficulty, and the same rule holds as in arteries elsewhere, only that you tie doubly and cut between. A good way is to make an incision on either side of the artery in the dura, then pass a curved aneurysm needle armed with catgut underneath the artery.

While the impressions made upon the inner table of the skull by these arteries would lead one to believe that the saw of the trephine must come very close to them and thereby be in danger of injuring them, I have not found such to be the case. The dura is usually well removed from the inner table of the skull when it is opened, and with a little care no harm can follow, although here as elsewhere it is well to be careful. In many books you will find it stated that these arteries will be found in the grooves; this must be so at times, but I am convinced they will not usually be found so. The fact that they carve channels for themselves in the bone at times, however, forcibly illustrates how much pressure must be exerted at times by the brain on any depressed fragments of bone; hence the great danger of leaving them. It also possibly illustrates to my mind why epilepsy and other phenomena are intermittent when following such injuries. In the case where there was such extensive oedema of the brain, also in the case of intradural hemorrhage, the trephining was done over these arteries yet presented no difficulty.

It is recommended to make the incision in the dura some little distance from the marginal opening in the bone. This is meant more especially where there has been damage to the brain, and to offset the danger of hernia cerebri. I do not see how this can be done and the dura then sewed up, for these cases usually require drainage. I think it would be better to make a crucial incision across the dura, insert a drainage-tube, and stitch as far as possible; leave flaps well open over wound and then stitch the edges of dura when the tube is removed. Or the four ends of the dura left by the crucial incision might be knotted with two strands of silkworm gut which are to be left sticking out of the skull. When the necessity for the drainage-tube has passed they could be knotted together with gutted bone. My former objection to the last mentioned plan may be successfully parried and may be done, however, to my mind the stitch dressing is not to be recommended. I am sure either of the two ways mentioned by myself will answer well in ordinary cases. I have found the postoperative oedema of the brain three times in cases of rupture of the middle meningeal artery. I have found the postoperative oedema of the brain three times in cases of rupture of the middle meningeal artery. I have found the postoperative oedema of the brain three times in cases of rupture of the middle meningeal artery.

to dislodge it. So I have now left it long and wrapped a little gauze around it. This has the advantage that the wood either comes away after the bleeding has ceased, or can be taken away in the first dressing.

I have presented these cases somewhat in detail, being convinced of the growing importance of this class of surgery, and the paucity of general literature as compared with that of the abdomen, for instance. Again, there will be variations in the nature of the cases and in the methods of operators, and the discussion and presentation of such cases are of importance. Especially is this true when we find that the greatest number of deaths from accidents in the city of New York are charged to fracture of the skull or some of its consequences. Every one knows the standing joke the metropolitan press makes of this subject in their editorials, and while mistakes will be made even with care most certainly occur from lack of the same on the part of the attendant. There should be some law passed concerning the exact disposition of accident cases of suspected head injury, even when the person injured has been suspected of drinking. Even this morning I read of a man thrown from a wagon on the east side of New York city, and who was refused treatment by the ambulance surgeon on the score of "alcoholism." He was taken to the station house and died this morning. This is a common story and usually indicates fracture of the skull with hemorrhage. I am sure that these accidents and complications must be as numerous in the country and town districts as in the cities, and no doubt often go unrecognized and untreated. I present these cases also especially as they have been worked out and carried to fairly successful issues by one who has had only general surgical and medical work to guide him, and no elaborate or complicated tools for the performance of such operations; it is really the judgment displayed in making the diagnosis and the following of the rules laid down by the masters of this subject that will determine results rather than any particularly brilliant operative methods. Caution is imperative here more than in any region of the body; yet when a fair conclusion is reached as to the necessity of operative interference, one can proceed with more reason and assurance of being right than in any other province of surgery. To the unknown author of *Brain Injuries and their Treatment*, in the *American Text book of Surgery*, my heartfelt thanks are due, and I advise every one having emergency cases to deal with to carefully study and restudy the same. My thanks are also especially due to Dr. P. J. McKeon, of this city, my colleague on the visiting staff of St. John's Hospital, whose long experience in this class of cases and his studies of the same have proved him a valuable and scientific counselor. I am also indebted to Dr. Alexander McDonald, the resident physician and surgeon at St. John's, who deserves equal credit with myself for the operative measures undertaken; also to the Sisters of St. Joseph, especially to Sister Mary Dennis, Hibbs, and Johannes, and to Mr. Kelly, to whose subsequent care and good nursing and attention the successful issue in many of those cases is certainly in a great measure due.

— DR. JAMES A. BURNS.

CASE VI. Subacute.—Primary symptoms of cerebral injury; temperature did not exceed 99° for the first week, then rose suddenly to 102° 8' to 103° 2'; and afterward varied irregularly from 99° to 104°; pulse and respiration only became frequent at the last; mental condition alternately stupid and delirious from the beginning. Death occurred in sixteen days.

Lesions.—Fracture of the base, laceration of both frontal, and of one temporo-sphenoidal lobe; subarachnoid clot in occipital region; general serous effusion with arachnoid opacity.

CASE VII. Subacute.—Primary symptoms from cerebral contusion which continued three weeks. Temperature in second and third weeks, 98° 5' to 99° +, with progressive mental improvement. In the fourth week the mental condition deteriorated. On the twenty-third day, temperature, 101°; in the four days following it varied from 98° 5' to 101° 6', and the pulse was frequent; on the twenty-seventh day, temperature rose from 100° 6' to 106° 6' without remission, and in the right axilla was from half a degree to a degree and two tenths higher than in the left; on the twenty-eighth and last day it was 108°, and the pulse, previously frequent, was from 54 to 74. The respiration was accelerated during the last two days, and the patient became irritable and restless.

Lesions.—Fracture of the base, several necrotic contusions upon the superior surface of the prefrontal lobes; general contusion with oedema; and general serous effusion over superior and lateral surfaces of the brain.

CASE VIII. Subacute.—Primary symptoms from parenchymatous injury. Temperature normal from sixth to ninth day, and afterward much of the time subnormal till the thirteenth day, when a severe chill was accompanied by an elevation to 101° +. A second chill on the nineteenth day was followed by a progressive rise of temperature to 105° 5' at death on the twenty-first day. After the second chill the patient grew mentally sluggish and became weaker; pulse and respiration were frequent.

Lesions.—General contusion of the brain with oedema; subcortical laceration of a frontal lobe; and serous effusion with arachnoid opacity over superior and lateral cerebral surfaces.

CASE IX. Subacute.—Primary symptoms, those of general contusion, followed by an intercurrent bronchitis. On the thirteenth day, occipital headache, which became general; somnolence and irritability; temperature, 101° to 104°, and on the eighteenth day, 105°, with delirium and post cervical rigidity; later, increased delirium and somnolence, with symptoms referable to implication of cranial and spinal nerves; progressive emaciation; lack of urinary and fecal control; rapid and insufficient respiration; unconsciousness and death on the thirty-first day. Temperature from 100° to 104°; pulse, 64 to 90; axillary temperatures variable, and when unsymmetrical, more frequently half a degree higher on the side opposite original injury.

Lesions.—Fracture of the base, thrombi in the lateral sinuses, and oedema of the brain with oedema of the pia mater. There was also a large serous effusion over the pons, medulla, inferior surface of the cerebellum, and in the fissure of Sylvius; fornix much softened, and trivial laceration of the inferior surface of the cerebellum. The *Streptococcus pyogenes* was found in the tissue of the cerebellum, and in the pia mater. (Primary symptoms of general contusion, which followed by an intercurrent bronchitis, were retained; left side temporarily rigid; right side parietic; pulse, 64 to 90; temperature, 100° to 104°; axillary temperatures variable, and when unsymmetrical, more frequently half a degree higher on the side opposite original injury.)

ture of 102° 6', temperature in the right axilla was 103° 2', while in the left it was 100° 4'; and at fifteen minutes' intervals rose to 101° 4' and 102° 8' in the left without change in the right. At this time the left upper extremity and foot were intensely cold to the touch. Death occurred in fifty-three hours.

Lesions.—General contusion with oedema; laceration in substance of the fornix; small pial hemorrhage upon the inferior surface of the cerebellum; small hemorrhagic serous effusion in one lateral ventricle, and large serous effusion with arachnoid opacity over the occipital and posterior portion of the parietal lobes.

CASE XI. Acute.—Primary symptoms of fractured base; temperature high from the first day; from 104° + to 105° 6' till fourth and fifth days, when it receded to 102° 8' to 101°, and again rose to 104° + to 105° + on the sixth and seventh days; muscular twitclings of the right side of the body and left hemiplegia and hemianesthesia on the sixth day; general convulsion beginning on the right side preceded death, which occurred on the seventh day.

Lesions.—General subarachnoid purulent effusion most copious over the left frontal lobe below the origin of the fracture.

It would seem impossible to determine *a priori* the circumstances under which an arachnitis is likely to follow meningeal injury. The alcoholic habit existed in but a minority of cases, the previous constitutional condition was often unimpaired, and the age ranged from early youth to past the middle period of life. The coexistent lesions were diverse, and had no obvious relation to the changes which the membranes had suffered. Fractures of the skull, cortical or subcortical lacerations, hemorrhages, or notable general contusions were variously discovered upon necropsic examination. Some degree of meningeal implication is probably almost invariable in intracranial injuries, but these cases fail to afford a clew to the immediate conditions which occasionally favor the development of arachnoid inflammation. The time of invasion was equally uncertain; it was in some instances immediate, and in others delayed for weeks after the reception of the injury. The interpretation of symptoms had therefore to be made without material aid from considerations of time or circumstance.

In three cases the arachnitis was primary, in another its initial symptoms were so insidious as to fail of recognition, and in the remaining seven its invasion was late and sharply defined. In the larger number, which may be considered typical, the course of symptoms referable to complicating lesions was interrupted by a distinct and somewhat sudden elevation of temperature accompanied by an evident change in the general condition of the patient. He became irritable, restless, delirious, or somnolent, and in one instance suffered a severe chill, though the effusion did not prove to be of purulent character. The subsequent range of temperature was erratic. It was marked by variations from day to day or from hour to hour, not usual in other intracranial lesions. The arachnitis was so constantly associated with other grave structural alterations that it is impossible to demonstrate its exact relation to temperature, but if my observations in these few cases which were capable of verification may be supplemented with others made in recovering cases which I had reason to believe were arachnoid inflammations, I should infer

that this variation was characteristic and ranged from $101^{\circ}+$ to $104^{\circ}+$. In the majority of verified fatal cases the temperature immediately before death was from $105^{\circ}+$ to 109° ; but in each some lesion of the brain substance existed in which a very high temperature was to be expected. In one exceptional case without such complication, in which it reached 107.4° , the effusion was purulent. Whether or not these fluctuations of temperature are due to a secondary implication of thermotaxic centers situated in the cerebral cortex, as suggested by Hale White, is immaterial in a study of symptoms as related to diagnosis.

After the invasion, and aside from peculiarities of temperature, the progress of the diseases was especially characterized by continued manifestations of cortical irritation. Some grade of delirium persisted in almost every case, and restlessness, irritability, or extreme sensitiveness to external impressions was often marked long after consciousness was finally lost. General or post-cervical muscular rigidity, in one instance a slight general convulsion, and in another a chill, were further indications of nervous excitation. They all, with the exception of the case of basilar inflammation, terminated within the week, and rather from asthenia than from coma the result of pressure. The pupils were oftener normal than otherwise, and the pulse and respiration failed to reflect the existing inflammatory process; moderate acceleration of the pulse and very slight, if any, increase in the frequency of respiration seemed to be the usual conditions. It can not be said that there was any sharp contrast in symptoms which indicated the character of the effusion. In one of the acute cases there were classical symptoms of ethenic inflammation, but there was no chill; in another, which began with a chill, the subsequent symptoms were no more pronounced than is common in the subacute form; while in the third and last, the invasion and progress of the inflammation were remarkably insidious.

The question of infection is uncertain. There was fracture of the vertex in two of the acute cases, and a scalp wound in the third; and in the case of basilar arachnitis, in which the *Streptococcus pneumoniae* was discovered in a large sero-fibrinous effusion, there was a fracture through the internal auditory canal and rupture of the tympanum. There was no means that a possibility of direct infection in these out of the three; the results were mediated in an acute condition, and in the absence of an evident pyogenic process there was no proved pathogenic relation between the effusive process and the disease of the cerebral hemisphere; and so good reason to suspect that it arose, if in the former case the focus is the pyogenic form of some readily recognizable, the general history is better interpreted upon the supposition that its development was in the usual course of inflammation by either intra-cranial infection or prolonged focus with the effused pus gradually diffused from a postulated local source.

I have included in the summary in Table M. Cases but notes of eight suppurated cases of intracerebral purulent abscesses which seem not of traumatic origin. They exhibit the same irregular fluctuations of temperature and

the same varied manifestations of cortical irritation which were observed in traumatic cases of either form which I have collated. They are of interest here as confirmatory of the proposition that the symptoms of arachnitis are not necessarily modified by its cause or grade.

It is clear from this analysis of meningeal hemorrhages and inflammations that the attempt to crystallize their symptoms with those of depressed fractures, and to formulate in a single word—compression—a resulting condition, is futile and misleading. It is no more defensible than a former practice of grouping organic diseases under the common name, dropsy. These several results of cranial injury indicate entirely different pathic conditions, and their external manifestations are more marked in their differences than in their resemblances. Even the cerebral compression which they are supposed to characteristically produce is in the majority of cases absent or replaced by a still more characteristic irritation. When it is further attempted to discriminate these artificially consolidated lesions from injuries of the brain substance by antithetical tabulations of symptoms, the possibilities of error are arithmetically increased. It is practicable from an examination of the cases which I have cited to demonstrate the unreliability, both positively and negatively, of each assumed individual diagnostic symptom in any one of the tables which are scattered through surgical text-books. The importance of a statement which I have previously made that a proper classification of morbid conditions must be based upon structural alterations, and their diagnosis established by careful analysis and comparison of resulting symptoms, is warrant for its repetition. The diagnosis of fractures, meningeal hemorrhages, and meningeal inflammations from brain lesions in the manner to which I have excepted fails in both particulars. A defective classification has been supplemented by an inaccurate analysis of symptoms, and faulty generalization has resulted in prevalent confusion.

IV. LESIONS OF THE BRAIN SUBSTANCE.

The injuries which the brain may suffer are general and local: a diffused contusion or a limited lesion, which may be either a contusion or a laceration. The degree of force which I have taken to represent the varying degrees of general lesions. I have followed the probability that some degree of general contusion always exists in traumatic injuries, even though local lesions may be prominent. At the first of my earlier illustrations it was only noted when its evidences were strikingly apparent, but later at a somewhat later date my view that there was but that certainly and proved; and yet such illustrations it will be found recorded to have been the product of the first impact of force. Local contusions or lacerations have been of numerous varieties, but none more frequent or less frequent than the following:—(1) A small, circumscribed, and usually deep, laceration of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (2) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (3) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (4) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (5) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (6) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (7) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (8) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (9) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (10) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (11) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (12) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (13) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (14) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (15) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (16) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (17) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (18) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (19) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (20) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (21) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (22) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (23) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (24) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (25) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (26) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (27) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (28) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (29) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (30) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (31) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (32) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (33) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (34) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (35) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (36) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (37) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (38) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (39) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (40) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (41) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (42) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (43) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (44) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (45) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (46) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (47) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (48) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (49) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (50) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (51) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (52) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (53) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (54) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (55) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (56) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (57) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (58) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (59) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (60) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (61) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (62) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (63) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (64) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (65) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (66) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (67) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (68) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (69) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (70) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (71) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (72) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (73) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (74) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (75) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (76) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (77) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (78) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (79) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (80) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (81) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (82) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (83) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (84) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (85) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (86) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (87) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (88) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (89) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (90) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (91) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (92) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (93) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (94) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (95) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (96) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (97) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (98) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (99) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull. (100) A small, circumscribed, and usually deep, contusion of the brain substance, often associated with a fracture of the skull, and sometimes with a fracture of the base of the skull.

been once disclosed. Some implication of the brain, therefore, may be regarded as practically assured in all cases of cranial injury.

In the study of brain lesions it is necessary to determine not only the symptoms they may have in common, but if possible the existence of others characteristic of individual forms.

1. GENERAL CONTUSION.—Notwithstanding the very constant occurrence of general contusion, it so rarely terminates fatally when uncomplicated by other structural changes that opportunity for observation of its distinctive symptoms is much more limited than in cases of hæmorrhages and arachnitis. I am enabled, however, to present six cases in which no concomitant lesion existed, or in which, if present, it was so trivial that it may be fairly assumed to have had no influence in the production of symptoms. In one there was absolutely nothing beyond the general contusion; in two there were also limited and non-infective dural thromboses; in another there was a single small extravasation into an optic thalamus, and in the other two there was a slight cortical laceration and correspondingly unimportant cortical hæmorrhage. In all there was a more or less intense general hyperæmia, which was sometimes more strongly pronounced in some particular region, as anteriorly, posteriorly, at the base, or in one hemisphere, than elsewhere. In three cases the pia was notably engaged; in three there was well marked or even excessive general œdema; in four, thrombosis of the minute vessels, which generally characterizes contusion, was a pronounced feature. I regard the last-mentioned condition as a manifestation of contusion, as it is habitually absent in the hyperæmia of idiopathic disease. Punctate extravasations were less numerous than is usual in the more frequent instances in which hyperæmia is associated with laceration. In those cases in which death was long deferred, the absence of inflammatory processes was verified by microscopic examination made at the time of necropsy.

The analysis of symptoms in the six cases is unsatisfactory. The few connecting links which measurably held together the cases of hæmorrhage or arachnitis have no corresponding representation. There was no uniformity either in the occurrence of individual symptoms or in their course or termination. In the single one which was absolutely uncomplicated there was no loss of consciousness at any time, till its final lapse from asthenia; in all the others it was primary and in three was permanent. There is no other individual symptom which occurred in more than half the cases cited. The pupils were dilated, contracted, or normal; the pulse and respiration were variable. It is true that delirium, mental irritability, or apathy, combined with muscular rigidity, convulsions, or some degree of paralysis, occurred in each instance save one, and in that

indication of the intracranial condition. It was never sub-normal on admission, and was never more than moderately elevated; in four cases out of five it was from 99° to 100° ; in the fifth it was $101^{\circ}+$, as it was in the sixth, in which it was not recorded till the second day. Its subsequent course was in general progressive, and with one exception attained a high degree before death ensued. Recissions were observed only once or twice in two cases which were considerably prolonged.

It is not difficult to comprehend the reasons for the diversity of symptoms, or for their irregular development, in view of the comprehensiveness of the lesion and its different degrees of intensity in different regions. The observation of the fact of regional variations is not limited to the comparatively few necropsies in which uncomplicated general contusion has been found to exist, but is even redundantly confirmed in the far greater number in which death has resulted from hæmorrhage, arachnitis, or extensive laceration. It is not unusual in case of a contusion which involves the entire brain to find that its structural evidences are emphasized in one hemisphere or in certain lobes or in certain regions; it may be in the cortex, the basal ganglia, or elsewhere. It is not more unusual to find in a largely diffused contusion that some part, as the cortex, one hemisphere, or the cerebellum, has practically escaped. All the characteristic structural alterations are alike subject to localization. The post-mortem inspections of the brain which I have directed have demonstrated also the instability of the parenchymatous serous exudation; this not only gravitates to dependent parts, but can often be freely expressed by the hand after section has been made. The dropsical effusion moves through the brain substance with the same certainty, if not with the same celerity, that it does through subcutaneous cellular tissue. There is no more reason to question the fluctuation during life in the amount or position of serous transudation or in the intensity of hyperæmia originally established by violence, than there is to doubt their often progressive increase or diminution. The punctate hæmorrhages into the brain substance are, of course, not subject to change, but I believe them to be less influential in the modification of symptoms than the conditions previously described.

These considerations seem sufficient to account for the wide variations noted in symptomatology. It is unnecessary to review the cases which illustrate the dependence of symptoms of cortical irritation upon cortical contusion of the vertex, or of pressure symptoms upon excessive general subcortical hyperæmia and œdema, or of various other combinations of symptoms with structural changes. It is quite possible that wider observation may further illumine the invasion and march of symptoms, but as these must continue to depend upon unstable conditions they are not likely even then to become fixed elements in diagnosis.

2. *Limited Contusions.*—The distinctly limited form of contusion is distinguished from laceration demands but brief consideration. In those cases and instances in which it occurs in a greater area through the entire cranium it can afford no point of comparison from those of a modified general lesion.

In its more usual form, in which it is confined to the cortex, it differs from laceration only in the extent of local injury to tissue, and the character of the symptoms will not be further influenced by the fact that the injury is a bruise rather than a wound. It is rarely a fatal lesion, and its existence is likely to be marked by the coexistence of others of greater magnitude or severity. It has been noted in but fifteen of the necropsic examinations which I have made, and in none of these had it appreciably contributed to the fatal result, and in but one occasioned recognizable symptoms. In the exceptional instance there had been no reason during life to suspect that there was a limited contusion rather than laceration.

(3) LACERATION.—I have expressed a doubt whether laceration of the brain occurs without some degree of contusion. I may add that a resultant cortical hæmorrhage, usually proportionate to the extent of local injury, and often sufficiently large to have an intrinsic value in the development of symptoms, is almost certain to exist as a complicating condition. I have failed to recognize one or both of these attendant lesions in but few instances, and from the time I began to record the full results of necropsic inspection, the accessory lesions as well as those which I regarded as essential, I have found the rule to be practically absolute. It is probable, however, when post-mortem indications of general injury are not pronounced, and laceration is extensive, with no more than moderate cortical hæmorrhage, that the significant symptoms have been derived from the local destruction of tissue.

I have collated ten cases in which laceration has been considerable, and in which cortical hæmorrhage and general contusion have been apparently insufficient to be symptomatically important. They include both cortical and sub-cortical injuries, variously situated upon and beneath the several surfaces of the brain, and have involved both localizing and non-localizing areas.

Consciousness was ordinarily lost in the beginning, though in two instances there was simple obscuration of the mental faculties, and in one consciousness was retained and the mental condition was unimpaired. Delirium very generally followed, often characterized by restlessness rather than by violence, or accompanied by fixed delusions. In one rather prolonged case there was a simple stupor in which the patient never fluttered, even at times when his intellectual powers were otherwise undisturbed. The subsequent progress of the case, when death was not an early termination, was likely to be marked by well-defined motor, sensory, or intellectual disturbances. Initial, transitory loss of vision and sensory control, were not infrequent symptoms. The sequelæ were often very variable, as previously noted in hæmorrhages, and were the characteristic of the particular region involved, and bore the aspect of local contusion.

The variations in temperature to which he is subjected are to be ascribed to the condition of the general system. In one instance the temperature was not elevated. In this light case, retaining the mind in a state of equilibrium, at brief:

Case XX.—101° on admission; 99° in five hours; and 97° on death in twenty-four hours.

Case XX.—101° on admission; 104·8° in forty-eight hours and for seventy-eight hours afterward; 101°+ to 102°+ for next ensuing forty-eight hours; and 107°+ at death in seven days seven hours. Rise progressive.

Case XXV.—104·8° on admission, after eighteen hours, and death in twenty-six hours.

Case XLIV.—98° on admission; 103·6°; 104·6°; 106·6° half hour ante mortem; death in nine hours and a half.

Case LII.—98·6° on admission; 104·7° in five hours; 103·8° to 103° on second and third days; 101° to 99° on fourth and fifth days; 99·8° to 101·8° till the end of the twentieth day; 102·4° on the twenty-first day; 105° on the twenty-second day; 97·5° before death on the twenty-third day.

Case LIX.—99·8° on the first day; 104·6° on the second day; 103·6° on the third day; 103·2° on the fourth day; 107° to 108·2° on the fifth day. Death.

Case LXXIII.—99·2° on admission after twelve hours; 103·8°; 104° in articulo mortis; 106° half hour post mortem. Death in ten hours.

Case C.—100° on admission, thirtieth day; 104°+ to 102° from thirty-first to thirty-fourth day; progressive rise to 107·6° at death after operation on thirty-sixth day.

These temperatures call for little comment. Their remarkable primary elevation, following recovery from shock, and in early fatal cases their rapid and progressive increase, sometimes continued even after death, with in general only brief and unimportant recessions, are in such contrast to what has been observed in hæmorrhages, meningeal inflammations, or even general contusions, that they are sufficiently striking phenomena to at once challenge and arrest attention. In a single instance in which in the last hours of life the temperature became subnormal, the exceptional fact is probably explicable by the asthenic condition finally induced by an advanced necrotic process.

A more comprehensive, and at the same time more accurate, conception of the symptoms due to laceration may be obtained from a review of the much larger number of cases in which limited destructive lesions are attended by other anatomical changes, perhaps equally important. It is only necessary to exclude those symptoms which have been found to be referable to such of the attendant lesions as they have occurred elsewhere in comparative isolation.

I have subjected to analysis forty-two cases of this type, in all of which the laceration has been distinctly marked, and in most of which the motor and sensory sequelæ have been fully complete. An occasional case has been left out of consideration in which the motor and sensory sequelæ, in which some characteristic symptom has been strikingly displayed. The region of the brain involved in the nature of the sequelæ had not been regarded.

The primary loss of consciousness which has been observed to precede the development of post-mortem temperature, the history of well marked sensory, motor, and intellectual disturbances in which there have been temporary periods, would hardly call for discussion in connection with the sequelæ of laceration. The sequelæ of laceration have been regarded as being of the nature of the sequelæ of contusion, and have been regarded as being of the nature of the sequelæ of contusion.

been noted in connection with other lesions, equally occur in the train of lacerations whether simple or complicated. The negative phenomena, if such a term is permissible, are indistinguishable if not identical, whatever lesion or lesions may be afterward discovered. This is readily comprehensible upon the assumption already made in case of hemorrhages, that some degree of general contusion attends all other intracranial injuries, and that to it, in conjunction with possible general shock, the immediate effect of traumatism is to be referred. If life is prolonged, the primary morbid condition will be replaced or supplemented after a variable period by the characteristic symptoms of the co-existent lesions. In cases in which consciousness has been retained from the first, as occasionally happens, the mental condition is often peculiar; it is not that of partial consciousness or of stupor, but rather of blunted perception. The patient seems lethargic, and, if sufficiently roused, apparently comprehends simple questions in a dull way and with effort; but the effort is quite likely to fall short of his making answer; he feels and sees, but scarcely thinks. From this condition he may immediately pass through somnolence or complete unconsciousness into coma and death, or he may at once regain his mental equilibrium. In a considerable number of instances, in place of this direct solution of a psychical problem, a new series of mental phenomena are interposed between the primary unconsciousness, or the condition of lethargy to which I have referred, and ultimate recovery or death.

In the previous paper upon injuries of the head I sketched in outline certain manifestations of mental disorder which I attributed to the general class. I am convinced from further observation and more careful analysis that their significance in symptomatology should have been restricted to injuries of the parenchyma, and mainly to such of them as were of the limited and destructive variety. I spoke of these mental aberrations as of no more than "rather frequent" occurrence, but when restricted to their proper place, as indicative of the lesions which they really represent, they become more nearly pathognomonic; they exist in some degree, or in some combination, in a very large majority of the cases which survive the initial stage. I have seen no reason to materially modify the picture I then presented. In a typical case, delirium of some grade or character follows or precedes restoration to consciousness; it may be violent and simulate the alcoholic form of mania, but oftener the patient is simply restless, excitable, incoherent, or perhaps inarticulate in speech, his mind distracted by fleeting fancies, yet amenable to control. A little later he may recognize his friends, converse intelligently, and even write, but on the day and upon every examination appear quite rational, though still delirious and prone to occasional outbreaks of rage. His hallucinations, fixed or transitory, and his memory is defective or

ent surroundings. His nocturnal delirium may soon disappear, and eventually, after the lapse of weeks or even months, his mind may become clear, his memory be restored, and his recovery complete. In a certain proportion of similar cases the termination is less fortunate, and some degree of permanent dementia remains. In many others, unhappily, the mental horizon never brightens after the inception of delirium, or, if at all, for a brief time only, and death is not long delayed. In another type of mental disorder a condition of apathy or hebeticude follows active delirium, and is likely to be merged in final unconsciousness. In still other cases delirium is of a muttering character from the beginning, or from an early stage, and is accompanied by stupor. The occasional instances in which delirium, like absolute retention of consciousness, occurs as a primary condition probably concern the complication, general contusion, rather than the laceration.

It may be worth while to call attention to the frequent want of correspondence observed between the severity or mildness of the invasive psychical symptoms and the final outcome of the injury. A violent commencement has not always involved an answerable sequestration, and so too a good beginning has sometimes made a very bad ending; but in either instance failure to forecast the future does not necessarily imply inability to recognize pregnant symptoms. Practically the existence of the lesion has been as legibly stamped upon the histories of such cases as upon those which have run a more conventional course.

There is a peculiar irritability or sensitiveness to external impressions which I have noted as of frequent occurrence, and have ascribed to cortical injury. It is an exaggerated response to trivial irritations and disturbances which seems due less to cutaneous or muscular hyperæsthesia than to an abnormal excitability of the emotional centers. Great vexation and impatience are often manifested from slight irritation, even in the last hours of life when the patient has remained motionless and apparently unconscious for a length of time.

Aside from symptoms connected with the perceptive and intellectual centers, loss of control over the bladder and rectum is of first importance among general indications. It is impossible to estimate its numerical frequency, for if these receptacles are empty at the time the brain injury is inflicted, and if, as often happens in recorded cases, life is afterward measured by hours or minutes even, this diagnostic point is necessarily lost. If such explicable cases are excluded, it may be said to have been very generally observed in the clinical studies of laceration which I have made, though it has sometimes failed of record. It has been equally noted in the absence of any form of paralysis, and when consciousness has been retained; and though some form of mental impairment may have always co-existed, the same loss or aberration of mental power when due to other lesions has not been characterized by this particular functional incapacity. The lacerations have been both cortical and subcortical, and have involved all the lobes and all regions of the brain, so that the direct cause of this lack of control would seem to be any wound of the

parenchyma, whether or not it may be ultimately traced to some special center.

Convulsions have been of comparatively frequent occurrence in the fatal cases. I recall but one instance of subsequent recovery in which laceration was fairly inferential. In the fifty-two cases upon which thus far conclusions have been founded there were general convulsions in ten, convulsive movements in three, and general muscular rigidity independent of meningeal inflammation in two. This is largely in excess of the proportion of cases in which this symptom occurs in hemorrhages, of which it has been supposed to be characteristic. I have never known it to follow simple general contusion even when of marked severity. I believe the pathic condition upon which convulsions depend to be distinguishable by certain peculiarities in their manifestation. In hemorrhages they result from compression or concomitant injury of the recognized motor area. In the thirteen cases enumerated in which they followed laceration, the seat of injury was usually in the frontal or temporo-sphenoidal lobes, or in both together; in two exceptional instances, the optic thalamus was lacerated in one, a parietal lobe was wounded by a fragment of bone in an old infected compound fracture in the other. If in some cases there were additional lacerations of other lobes, they were of secondary importance and distant from motor centers. It is obvious that when convulsions result from an intracranial hemorrhage which has relation to motor centers, they are likely to be preceded or accompanied by paralysis, as in my own cases, or in three recently reported by Dr. A. J. McCosh. If they are induced by laceration, which as it has been shown is in general frontal or temporo-sphenoidal, paralysis is an unlikely factor in the case. It really occurred in but two instances: once in the compound parietal lesion mentioned, and once in a frontal necrosis surrounding a small tumor which was only an incident in a general traumatism.

The character of the associated symptoms—febrile reaction on the one hand and of laceration on the other—aid much in determining the significance of a contusion. The temperature which precedes the paroxysm has special value since it is a very early indication of the nature of the lesion and of positive character. In every instance within my observation it has been distinctly higher than that which accompanied hemorrhages. The temperature subsequent to convulsions has, of course, no diagnostic importance. I have been particularly struck by the fact, however, that the degree of febrile reaction, though the difference is not marked, is pathic rather more frequently developed upon the opposite side.

The paralysis and anesthesia which may follow laceration are of a fairly constant character, the location affording the nature of the lesion has been established. Their very great value lies however in hemorrhages. Immediately after onset or dependent from later cause without the possibility from the mere fact of their existence that there has occurred a destructive lesion of the brain substance, for the location having been determined by other considerations, these conditions may be quite sufficient for localization. Their association with laceration is recognized in

many of the cases which I have described. The subject of paralysis and anesthesia in general is sufficiently well understood to obviate the necessity of giving it any special attention in the present review of symptoms.

The irregularity of the pupils has not impressed me as of greater symptomatic importance in this than in other encephalic lesions. The forms and combinations of pupillary variation have been so numerous, and the instances in which no pupillary changes have occurred have been so frequent, that I have come to doubt the practical value of the indications which they afford. The ten cases of comparatively uncomplicated laceration, quoted heretofore, will serve to illustrate the inconstant relation which exists between the condition of the pupils and the nature of the brain injury. In four cases there was no pupillary change, though in each one laceration was extensive, and included in one instance an excavation of an entire frontal lobe, in two others cortical destruction of both parietal lobes at the vertex, and in the fourth a considerable laceration of a frontal lobe at the base, besides subsidiary injuries of the temporo-sphenoidal and occipital lobes, the cerebellum, and a corpus striatum, variously distributed. In two cases in which both pupils were very moderately dilated there was gunshot laceration of a parietal lobe in one, and a laceration of the inferior surface of both frontal lobes in the other. In two other cases there was slight dilatation of the corresponding pupil with laceration of the frontal, parietal, and occipital lobes in the first, and of the frontal and temporo-sphenoidal lobes in the second. In a case of laceration of the lateral aspect of a whole hemisphere there was dilatation of the pupil on the opposite side. In the final case there was contraction of both pupils attending similar laceration of the lateral aspect of a hemisphere, with slight injury of the cerebellum and a general cortical hemorrhage. I am incapable of understanding how any general law is to be derived from the comparison of such kind as these cases afford. The only generalization which I have been able to make is that the pupils are more frequently normal than in cerebral hemorrhages.

The high temperatures which characterized simple lacerations were maintained in the present series of operations. In the forty-two complicated cases analyzed the febrile observation was made immediately upon admission, but was not recorded in thirteen of some hours or days had elapsed after the completion of the surgery. The ultimate character of the temperature, such as when such records are given in articles posted. Rectal temperatures only were noted.

The general temperature was elevated in two cases, was normal in one, and was subnormal in six; in the remaining thirty-three it was 99° to 100° (mean 99.5°), 100° to 101° (mean 100.5°), 101° to 102° (mean 101.5°), 102° to 103° (mean 102.5°), 103° to 104° (mean 103.5°), 104° to 105° (mean 104.5°), 105° to 106° (mean 105.5°), 106° to 107° (mean 106.5°), 107° to 108° (mean 107.5°), 108° to 109° (mean 108.5°), 109° to 110° (mean 109.5°), 110° to 111° (mean 110.5°), 111° to 112° (mean 111.5°), 112° to 113° (mean 112.5°), 113° to 114° (mean 113.5°), 114° to 115° (mean 114.5°), 115° to 116° (mean 115.5°), 116° to 117° (mean 116.5°), 117° to 118° (mean 117.5°), 118° to 119° (mean 118.5°), 119° to 120° (mean 119.5°), 120° to 121° (mean 120.5°), 121° to 122° (mean 121.5°), 122° to 123° (mean 122.5°), 123° to 124° (mean 123.5°), 124° to 125° (mean 124.5°), 125° to 126° (mean 125.5°), 126° to 127° (mean 126.5°), 127° to 128° (mean 127.5°), 128° to 129° (mean 128.5°), 129° to 130° (mean 129.5°), 130° to 131° (mean 130.5°), 131° to 132° (mean 131.5°), 132° to 133° (mean 132.5°), 133° to 134° (mean 133.5°), 134° to 135° (mean 134.5°), 135° to 136° (mean 135.5°), 136° to 137° (mean 136.5°), 137° to 138° (mean 137.5°), 138° to 139° (mean 138.5°), 139° to 140° (mean 139.5°), 140° to 141° (mean 140.5°), 141° to 142° (mean 141.5°), 142° to 143° (mean 142.5°), 143° to 144° (mean 143.5°), 144° to 145° (mean 144.5°), 145° to 146° (mean 145.5°), 146° to 147° (mean 146.5°), 147° to 148° (mean 147.5°), 148° to 149° (mean 148.5°), 149° to 150° (mean 149.5°), 150° to 151° (mean 150.5°), 151° to 152° (mean 151.5°), 152° to 153° (mean 152.5°), 153° to 154° (mean 153.5°), 154° to 155° (mean 154.5°), 155° to 156° (mean 155.5°), 156° to 157° (mean 156.5°), 157° to 158° (mean 157.5°), 158° to 159° (mean 158.5°), 159° to 160° (mean 159.5°), 160° to 161° (mean 160.5°), 161° to 162° (mean 161.5°), 162° to 163° (mean 162.5°), 163° to 164° (mean 163.5°), 164° to 165° (mean 164.5°), 165° to 166° (mean 165.5°), 166° to 167° (mean 166.5°), 167° to 168° (mean 167.5°), 168° to 169° (mean 168.5°), 169° to 170° (mean 169.5°), 170° to 171° (mean 170.5°), 171° to 172° (mean 171.5°), 172° to 173° (mean 172.5°), 173° to 174° (mean 173.5°), 174° to 175° (mean 174.5°), 175° to 176° (mean 175.5°), 176° to 177° (mean 176.5°), 177° to 178° (mean 177.5°), 178° to 179° (mean 178.5°), 179° to 180° (mean 179.5°), 180° to 181° (mean 180.5°), 181° to 182° (mean 181.5°), 182° to 183° (mean 182.5°), 183° to 184° (mean 183.5°), 184° to 185° (mean 184.5°), 185° to 186° (mean 185.5°), 186° to 187° (mean 186.5°), 187° to 188° (mean 187.5°), 188° to 189° (mean 188.5°), 189° to 190° (mean 189.5°), 190° to 191° (mean 190.5°), 191° to 192° (mean 191.5°), 192° to 193° (mean 192.5°), 193° to 194° (mean 193.5°), 194° to 195° (mean 194.5°), 195° to 196° (mean 195.5°), 196° to 197° (mean 196.5°), 197° to 198° (mean 197.5°), 198° to 199° (mean 198.5°), 199° to 200° (mean 199.5°), 200° to 201° (mean 200.5°), 201° to 202° (mean 201.5°), 202° to 203° (mean 202.5°), 203° to 204° (mean 203.5°), 204° to 205° (mean 204.5°), 205° to 206° (mean 205.5°), 206° to 207° (mean 206.5°), 207° to 208° (mean 207.5°), 208° to 209° (mean 208.5°), 209° to 210° (mean 209.5°), 210° to 211° (mean 210.5°), 211° to 212° (mean 211.5°), 212° to 213° (mean 212.5°), 213° to 214° (mean 213.5°), 214° to 215° (mean 214.5°), 215° to 216° (mean 215.5°), 216° to 217° (mean 216.5°), 217° to 218° (mean 217.5°), 218° to 219° (mean 218.5°), 219° to 220° (mean 219.5°), 220° to 221° (mean 220.5°), 221° to 222° (mean 221.5°), 222° to 223° (mean 222.5°), 223° to 224° (mean 223.5°), 224° to 225° (mean 224.5°), 225° to 226° (mean 225.5°), 226° to 227° (mean 226.5°), 227° to 228° (mean 227.5°), 228° to 229° (mean 228.5°), 229° to 230° (mean 229.5°), 230° to 231° (mean 230.5°), 231° to 232° (mean 231.5°), 232° to 233° (mean 232.5°), 233° to 234° (mean 233.5°), 234° to 235° (mean 234.5°), 235° to 236° (mean 235.5°), 236° to 237° (mean 236.5°), 237° to 238° (mean 237.5°), 238° to 239° (mean 238.5°), 239° to 240° (mean 239.5°), 240° to 241° (mean 240.5°), 241° to 242° (mean 241.5°), 242° to 243° (mean 242.5°), 243° to 244° (mean 243.5°), 244° to 245° (mean 244.5°), 245° to 246° (mean 245.5°), 246° to 247° (mean 246.5°), 247° to 248° (mean 247.5°), 248° to 249° (mean 248.5°), 249° to 250° (mean 249.5°), 250° to 251° (mean 250.5°), 251° to 252° (mean 251.5°), 252° to 253° (mean 252.5°), 253° to 254° (mean 253.5°), 254° to 255° (mean 254.5°), 255° to 256° (mean 255.5°), 256° to 257° (mean 256.5°), 257° to 258° (mean 257.5°), 258° to 259° (mean 258.5°), 259° to 260° (mean 259.5°), 260° to 261° (mean 260.5°), 261° to 262° (mean 261.5°), 262° to 263° (mean 262.5°), 263° to 264° (mean 263.5°), 264° to 265° (mean 264.5°), 265° to 266° (mean 265.5°), 266° to 267° (mean 266.5°), 267° to 268° (mean 267.5°), 268° to 269° (mean 268.5°), 269° to 270° (mean 269.5°), 270° to 271° (mean 270.5°), 271° to 272° (mean 271.5°), 272° to 273° (mean 272.5°), 273° to 274° (mean 273.5°), 274° to 275° (mean 274.5°), 275° to 276° (mean 275.5°), 276° to 277° (mean 276.5°), 277° to 278° (mean 277.5°), 278° to 279° (mean 278.5°), 279° to 280° (mean 279.5°), 280° to 281° (mean 280.5°), 281° to 282° (mean 281.5°), 282° to 283° (mean 282.5°), 283° to 284° (mean 283.5°), 284° to 285° (mean 284.5°), 285° to 286° (mean 285.5°), 286° to 287° (mean 286.5°), 287° to 288° (mean 287.5°), 288° to 289° (mean 288.5°), 289° to 290° (mean 289.5°), 290° to 291° (mean 290.5°), 291° to 292° (mean 291.5°), 292° to 293° (mean 292.5°), 293° to 294° (mean 293.5°), 294° to 295° (mean 294.5°), 295° to 296° (mean 295.5°), 296° to 297° (mean 296.5°), 297° to 298° (mean 297.5°), 298° to 299° (mean 298.5°), 299° to 300° (mean 299.5°), 300° to 301° (mean 300.5°), 301° to 302° (mean 301.5°), 302° to 303° (mean 302.5°), 303° to 304° (mean 303.5°), 304° to 305° (mean 304.5°), 305° to 306° (mean 305.5°), 306° to 307° (mean 306.5°), 307° to 308° (mean 307.5°), 308° to 309° (mean 308.5°), 309° to 310° (mean 309.5°), 310° to 311° (mean 310.5°), 311° to 312° (mean 311.5°), 312° to 313° (mean 312.5°), 313° to 314° (mean 313.5°), 314° to 315° (mean 314.5°), 315° to 316° (mean 315.5°), 316° to 317° (mean 316.5°), 317° to 318° (mean 317.5°), 318° to 319° (mean 318.5°), 319° to 320° (mean 319.5°), 320° to 321° (mean 320.5°), 321° to 322° (mean 321.5°), 322° to 323° (mean 322.5°), 323° to 324° (mean 323.5°), 324° to 325° (mean 324.5°), 325° to 326° (mean 325.5°), 326° to 327° (mean 326.5°), 327° to 328° (mean 327.5°), 328° to 329° (mean 328.5°), 329° to 330° (mean 329.5°), 330° to 331° (mean 330.5°), 331° to 332° (mean 331.5°), 332° to 333° (mean 332.5°), 333° to 334° (mean 333.5°), 334° to 335° (mean 334.5°), 335° to 336° (mean 335.5°), 336° to 337° (mean 336.5°), 337° to 338° (mean 337.5°), 338° to 339° (mean 338.5°), 339° to 340° (mean 339.5°), 340° to 341° (mean 340.5°), 341° to 342° (mean 341.5°), 342° to 343° (mean 342.5°), 343° to 344° (mean 343.5°), 344° to 345° (mean 344.5°), 345° to 346° (mean 345.5°), 346° to 347° (mean 346.5°), 347° to 348° (mean 347.5°), 348° to 349° (mean 348.5°), 349° to 350° (mean 349.5°), 350° to 351° (mean 350.5°), 351° to 352° (mean 351.5°), 352° to 353° (mean 352.5°), 353° to 354° (mean 353.5°), 354° to 355° (mean 354.5°), 355° to 356° (mean 355.5°), 356° to 357° (mean 356.5°), 357° to 358° (mean 357.5°), 358° to 359° (mean 358.5°), 359° to 360° (mean 359.5°), 360° to 361° (mean 360.5°), 361° to 362° (mean 361.5°), 362° to 363° (mean 362.5°), 363° to 364° (mean 363.5°), 364° to 365° (mean 364.5°), 365° to 366° (mean 365.5°), 366° to 367° (mean 366.5°), 367° to 368° (mean 367.5°), 368° to 369° (mean 368.5°), 369° to 370° (mean 369.5°), 370° to 371° (mean 370.5°), 371° to 372° (mean 371.5°), 372° to 373° (mean 372.5°), 373° to 374° (mean 373.5°), 374° to 375° (mean 374.5°), 375° to 376° (mean 375.5°), 376° to 377° (mean 376.5°), 377° to 378° (mean 377.5°), 378° to 379° (mean 378.5°), 379° to 380° (mean 379.5°), 380° to 381° (mean 380.5°), 381° to 382° (mean 381.5°), 382° to 383° (mean 382.5°), 383° to 384° (mean 383.5°), 384° to 385° (mean 384.5°), 385° to 386° (mean 385.5°), 386° to 387° (mean 386.5°), 387° to 388° (mean 387.5°), 388° to 389° (mean 388.5°), 389° to 390° (mean 389.5°), 390° to 391° (mean 390.5°), 391° to 392° (mean 391.5°), 392° to 393° (mean 392.5°), 393° to 394° (mean 393.5°), 394° to 395° (mean 394.5°), 395° to 396° (mean 395.5°), 396° to 397° (mean 396.5°), 397° to 398° (mean 397.5°), 398° to 399° (mean 398.5°), 399° to 400° (mean 399.5°), 400° to 401° (mean 400.5°), 401° to 402° (mean 401.5°), 402° to 403° (mean 402.5°), 403° to 404° (mean 403.5°), 404° to 405° (mean 404.5°), 405° to 406° (mean 405.5°), 406° to 407° (mean 406.5°), 407° to 408° (mean 407.5°), 408° to 409° (mean 408.5°), 409° to 410° (mean 409.5°), 410° to 411° (mean 410.5°), 411° to 412° (mean 411.5°), 412° to 413° (mean 412.5°), 413° to 414° (mean 413.5°), 414° to 415° (mean 414.5°), 415° to 416° (mean 415.5°), 416° to 417° (mean 416.5°), 417° to 418° (mean 417.5°), 418° to 419° (mean 418.5°), 419° to 420° (mean 419.5°), 420° to 421° (mean 420.5°), 421° to 422° (mean 421.5°), 422° to 423° (mean 422.5°), 423° to 424° (mean 423.5°), 424° to 425° (mean 424.5°), 425° to 426° (mean 425.5°), 426° to 427° (mean 426.5°), 427° to 428° (mean 427.5°), 428° to 429° (mean 428.5°), 429° to 430° (mean 429.5°), 430° to 431° (mean 430.5°), 431° to 432° (mean 431.5°), 432° to 433° (mean 432.5°), 433° to 434° (mean 433.5°), 434° to 435° (mean 434.5°), 435° to 436° (mean 435.5°), 436° to 437° (mean 436.5°), 437° to 438° (mean 437.5°), 438° to 439° (mean 438.5°), 439° to 440° (mean 439.5°), 440° to 441° (mean 440.5°), 441° to 442° (mean 441.5°), 442° to 443° (mean 442.5°), 443° to 444° (mean 443.5°), 444° to 445° (mean 444.5°), 445° to 446° (mean 445.5°), 446° to 447° (mean 446.5°), 447° to 448° (mean 447.5°), 448° to 449° (mean 448.5°), 449° to 450° (mean 449.5°), 450° to 451° (mean 450.5°), 451° to 452° (mean 451.5°), 452° to 453° (mean 452.5°), 453° to 454° (mean 453.5°), 454° to 455° (mean 454.5°), 455° to 456° (mean 455.5°), 456° to 457° (mean 456.5°), 457° to 458° (mean 457.5°), 458° to 459° (mean 458.5°), 459° to 460° (mean 459.5°), 460° to 461° (mean 460.5°), 461° to 462° (mean 461.5°), 462° to 463° (mean 462.5°), 463° to 464° (mean 463.5°), 464° to 465° (mean 464.5°), 465° to 466° (mean 465.5°), 466° to 467° (mean 466.5°), 467° to 468° (mean 467.5°), 468° to 469° (mean 468.5°), 469° to 470° (mean 469.5°), 470° to 471° (mean 470.5°), 471° to 472° (mean 471.5°), 472° to 473° (mean 472.5°), 473° to 474° (mean 473.5°), 474° to 475° (mean 474.5°), 475° to 476° (mean 475.5°), 476° to 477° (mean 476.5°), 477° to 478° (mean 477.5°), 478° to 479° (mean 478.5°), 479° to 480° (mean 479.5°), 480° to 481° (mean 480.5°), 481° to 482° (mean 481.5°), 482° to 483° (mean 482.5°), 483° to 484° (mean 483.5°), 484° to 485° (mean 484.5°), 485° to 486° (mean 485.5°), 486° to 487° (mean 486.5°), 487° to 488° (mean 487.5°), 488° to 489° (mean 488.5°), 489° to 490° (mean 489.5°), 490° to 491° (mean 490.5°), 491° to 492° (mean 491.5°), 492° to 493° (mean 492.5°), 493° to 494° (mean 493.5°), 494° to 495° (mean 494.5°), 495° to 496° (mean 495.5°), 496° to 497° (mean 496.5°), 497° to 498° (mean 497.5°), 498° to 499° (mean 498.5°), 499° to 500° (mean 499.5°), 500° to 501° (mean 500.5°), 501° to 502° (mean 501.5°), 502° to 503° (mean 502.5°), 503° to 504° (mean 503.5°), 504° to 505° (mean 504.5°), 505° to 506° (mean 505.5°), 506° to 507° (mean 506.5°), 507° to 508° (mean 507.5°), 508° to 509° (mean 508.5°), 509° to 510° (mean 509.5°), 510° to 511° (mean 510.5°), 511° to 512° (mean 511.5°), 512° to 513° (mean 512.5°), 513° to 514° (mean 513.5°), 514° to 515° (mean 514.5°), 515° to 516° (mean 515.5°), 516° to 517° (mean 516.5°), 517° to 518° (mean 517.5°), 518° to 519° (mean 518.5°), 519° to 520° (mean 519.5°), 520° to 521° (mean 520.5°), 521° to 522° (mean 521.5°), 522° to 523° (mean 522.5°), 523° to 524° (mean 523.5°), 524° to 525° (mean 524.5°), 525° to 526° (mean 525.5°), 526° to 527° (mean 526.5°), 527° to 528° (mean 527.5°), 528° to 529° (mean 528.5°), 529° to 530° (mean 529.5°), 530° to 531° (mean 530.5°), 531° to 532° (mean 531.5°), 532° to 533° (mean 532.5°), 533° to 534° (mean 533.5°), 534° to 535° (mean 534.5°), 535° to 536° (mean 535.5°), 536° to 537° (mean 536.5°), 537° to 538° (mean 537.5°), 538° to 539° (mean 538.5°), 539° to 540° (mean 539.5°), 540° to 541° (mean 540.5°), 541° to 542° (mean 541.5°), 542° to 543° (mean 542.5°), 543° to 544° (mean 543.5°), 544° to 545° (mean 544.5°), 545° to 546° (mean 545.5°), 546° to 547° (mean 546.5°), 547° to 548° (mean 547.5°), 548° to 549° (mean 548.5°), 549° to 550° (mean 549.5°), 550° to 551° (mean 550.5°), 551° to 552° (mean 551.5°), 552° to 553° (mean 552.5°), 553° to 554° (mean 553.5°), 554° to 555° (mean 554.5°), 555° to 556° (mean 555.5°), 556° to 557° (mean 556.5°), 557° to 558° (mean 557.5°), 558° to 559° (mean 558.5°), 559° to 560° (mean 559.5°), 560° to 561° (mean 560.5°), 561° to 562° (mean 561.5°), 562° to 563° (mean 562.5°), 563° to 564° (mean 563.5°), 564° to 565° (mean 564.5°), 565° to 566° (mean 565.5°), 566° to 567° (mean 566.5°), 567° to 568° (mean 567.5°), 568° to 569° (mean 568.5°), 569° to 570° (mean 569.5°), 570° to 571° (mean 570.5°), 571° to 572° (mean 571.5°), 572° to 573° (mean 572.5°), 573° to 574° (mean 573.5°), 574° to 575° (mean 574.5°), 575° to 576° (mean 575.5°), 576° to 577° (mean 576.5°), 577° to 578° (mean 577.5°), 578° to 579° (mean 578.5°), 579° to 580° (mean 579.5°), 580° to 581° (mean 580.5°), 581° to 582° (mean 581.5°), 582° to 583° (mean 582.5°), 583° to 584° (mean 583.5°), 584° to 585° (mean 584.5°), 585° to 586° (mean 585.5°), 586° to 587° (mean 586.5°), 587° to 588° (mean 587.5°), 588° to 589° (mean 588.5°), 589° to 590° (mean 589.5°), 590° to 591° (mean 590.5°), 591° to 592° (mean 591.5°), 592° to 593° (mean 592.5°), 593° to 594° (mean 593.5°), 594° to 595° (mean 594.5°), 595° to 596° (mean 595.5°), 596° to 597° (mean 596.5°), 597° to 598° (mean 597.5°), 598° to 599° (mean 598.5°), 599° to 600° (mean 599.5°), 600° to 601° (mean 600.5°), 601° to 602° (mean 601.5°), 602° to 603° (mean 602.5°), 603° to 604° (mean 603.5°), 604° to 605° (mean 604.5°), 605° to 606° (mean 605.5°), 606° to 607° (mean 606.5°), 607° to 608° (mean 607.5°), 608° to 609° (mean 608.5°), 609° to 610° (mean 609.5°), 610° to 611° (mean 610.5°), 611° to 612° (mean 611.5°),

ably some degree of general contusion existed. There were two cases of hemorrhage without laceration, and one of limited contusion without hemorrhage. The inferential lesions, those occurring without opportunity for necropsic inspection, were somewhat less diversified. They included four cases of depressed fracture of the vertex, with moderate general contusion in three, and with epidural hemorrhage and laceration of the frontal lobe in one; four cases of fractured base, with laceration of frontal and temporo-sphenoidal lobes in three, and with hemorrhage and general contusion in one; two cases of laceration of the frontal lobe, with parietal hemorrhage; and one case with simple general contusion.

The pulse was fuller and stronger on the side corresponding to the seat of injury in eight cases, upon the opposite side in nine, and in two this relation was unknown, from imperfect clinical record in one instance, and *ex necessitate rei*, in a case of general contusion, in the other.

It would seem impossible, therefore, to infer the character or location of the lesions from this symptom alone; it is equally so from any correlation which exists between it and others by which it has been accompanied. The first few cases seemed to indicate a suggestive connection with the pupillary condition, which larger experience has shown to be fallacious. The pupils are dilated in a considerable number of cases, normal in an almost equal number, and contracted or asymmetrical in others.*

$$\|f\|_{\infty} = \sup_{x \in \mathbb{R}^n} |f(x)|.$$

A STUDY OF ERYSIPELAS.

LES INFECTIONS D'INTERESSE COLLECTIF EN SUISSE ALIMENTAIRE

THE CURATIVE EFFECTS OF QUANTITATIVE STRETCHING
AND TENSILE COMPRESSIONS

[illegible]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
PUBLISHED WEEKLY
Subscription price, Five Dollars Per Annum in Advance
Single Copies, Fifteen Cents
Entered as Second-Class Matter, May 2, 1917
Postpaid
Acceptance for mailing at special rate of postage provided for in Act of October 3, 1917
Authorized by Act of October 3, 1917
Copyright, 1918, by American Medical Association
Printed at the American Medical Association, 535 North Dearborn Street, Chicago, Ill.
Second-Class Postage Paid at Chicago, Ill.
Postmaster: Send address changes to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, Ill.

THE UNIVERSITY OF CHICAGO PRESS

Journal of Interpersonal Violence 25(10)

4. *Journal* 11.

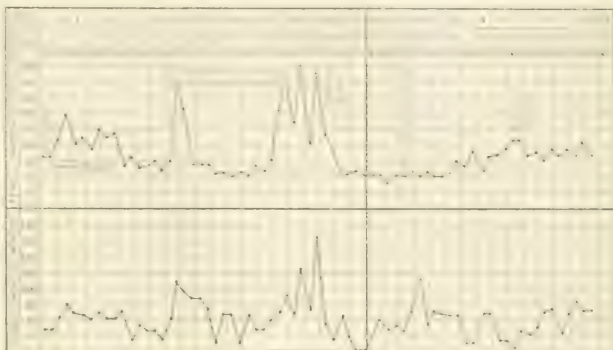
Reared entering into the second group of bees, whose crystalloid has a smaller distance upon penetrating areas and upon accumulation, gradually, but satisfactorily, becomes upon their important output away and be out of place.

Dr. W. B. Coley, of the New York Hospital for the Blind and Crippled, has discovered a new treatment for tetanized horses. He began his investigations early in September, 1881, independently of similar experiments going on in Germany (Pfeiffer's), and he has followed the credit of having been introduced into America (see previous note with the observations of) ascribed to a Hungarian, Dr. C. G. Sigmund, to have obtained, in some

cases, the complete disappearance of carcinoma and sarcoma under this new method of treatment.

Dr. J. H. Monks, of the Boston City Hospital, followed Dr. Coley's treatment in two cases of large inoperable sarcoma, but his results have not been favorable.

Erysipelas of the Wound and of the Face; Curative Influence

[illegible]

from the Wood. *Religion at the Time*. (New York: P. O. Sullivan, twenty-five years of age, entered the hospital on January 1, 1896. He was among healthy adult who was admitted into the hospital for exposure upon a self-reported case of six weeks' duration, due to presumed gonorrhea. Abundant and thorough examinations. Urine negative.

described by Dr. Watson in February, 1871. The plant is not self-sufficient, grows most luxuriantly in wet ground. The fruit is more or less long, cylindrical, brownish, and shining when ripe. The seeds, after having been scalded with boiling water, and growth of the embryo, are used with, or without, salt, as a vegetable. In some cases, however, has obtained by means of a fine sieve with threads. There are other several families from the island, and the one described is a good example of the most common.

On the following morning the patient, however, the patient was working well with no marked abnormal movements. An examination of the hand at the time showed no paresthesia, numbness and weakness was apparently normal. The nerve was not enlarged and there was no marked tenderness. The free portion obtained and examined within the normal limits for normal there, and it was thus apparent that the dye had no relation to the local condition.

the two animals may affect our estimates (Forsgren 1970). Our findings are consistent with the above, but, as it is possible to breed with varying confidence and varying investment in a given offspring, it is hard to see how the same animal could change its strategy in this way. It is more likely that the two animals were different individuals.

tumor, extending into the tissues all about. The central mass measures in all directions eight centimetres. It is—except in the sloughing portions—of a grayish-red appearance, and contains one or more small cysts with gelatinous contents. Immediately at the bottom of the tumor is a small mass of the same consistence and three centimetres in diameter. At another place adjoining the tumor is a slightly yellowish translucent mass of tissue containing several hemorrhages and presenting the appearance of fat. From the inner side of the tumor there is a large projecting mass, five centimetres in circumference, circumscribed in part and in part connected with the parent growth, but easily separable from the main tumor and surrounding tissues. This mass is opaque and whitish-gray in color, and of tolerably firm consistence, though not so consistent as the main tumor. There is slight infiltration into the muscular tissue. In the surrounding muscle there is considerable fibrous tissue.

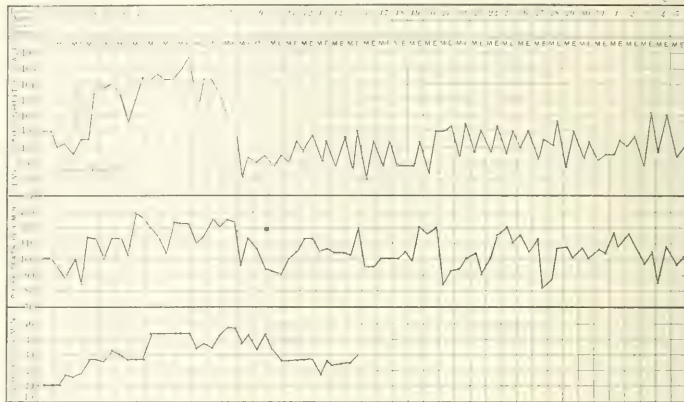
The part of the autopsy relating to the tumor is here given in full. An examination of the other organs showed the general lesions of septicæmia. There were marked parenchymatous swelling and degeneration of the liver, spleen, and heart; also minute hemorrhages in both the pleura and pericardium. Cultures were made at the autopsy from various parts of the tumor and from all the organs. The results of the cultures are as follows: 1. From the tumor and its neighborhood there were numerous colonies of streptococci, a few of the colon bacillus, and a few of the *Bacillus pyocyaneus*. 2. From the inguinal gland on the inside of the tumor, pure cultures of streptococci. 3. From the spleen, liver, and blood of heart, pure cultures of streptococci. The streptococcus in its growth conforms to the character of the *Streptococcus pyogenes*.

Careful microscopic examination of the tumor was made, both fresh and after hardening in various media. The tumor was found to be a large mixed-cell sarcoma, with a considerable formation of myxomatous tissue in various parts. The gelatinous-looking nodule in the remnants of the tumor had a typical myxomatous structure; throughout the tumor, especially in sections of portions adjoining the slough, numerous groups of streptococci were found. They were to a great extent in the intercellular spaces of the tumor, often associated with thrombi. These were the only bacteria found on microscopic examination. The cells of the tumor, except where the actual slough had taken place, were well preserved and contained numerous nuclear figures indicating rapid cell proliferation.

On sectioning the patient's body a general septicæmia was observed; the examination showed that the tumor was the source of the infection. The microscopic examination failed to show any evidence of the tumor being the source of the infection. The septicæmia was the only one found in the body, and it was the only one found in the body. The microscopic examination failed to show any evidence of the tumor being the source of the infection. The septicæmia was the only one found in the body, and it was the only one found in the body.

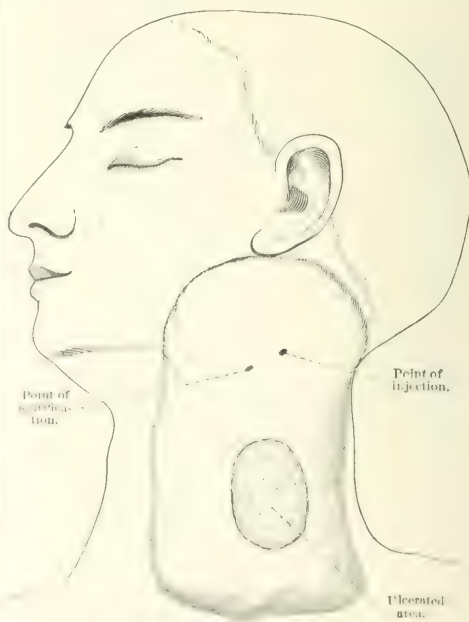
On the 12th of June a large swelling of the neck, the first of the kind, was observed. It was the first of the kind, and it was the first of the kind.

the Inflammatory Reaction; Slight Influence upon the Growth; Death; no Autopsy.—E. D., domestic, thirty-five years old, entered the Boston City Hospital on September 12, 1893. Family and past histories negative. Present illness: About three months ago she first noticed small lumps, of the size of a bean, non-painful, on the left side of the neck. They have gradually



Group II, Case IV.

increased in size, and during the past few weeks the growth has become more rapid and a large mass has resulted. Pain has become a prominent symptom.



Group II, Case IV.

Physical Examination. Well developed; somewhat emaciated. Heart and lungs negative. Liver and spleen not enlarged. Neck: On the left side of the neck (*vide cut*) is a swelling,

May 15th.—She was much improved. The bowels have been kept open. No pain in the legs or abdomen. At the right iliac region the tumors have apparently diminished in size. The small masses over the right labia have increased considerably during the preceding two weeks; now they appear red and somewhat soft, as if ready to ulcerate. One of these masses is actually discharging a thin fluid. Good general condition. Patient was discharged, and has not been heard from since.

In Dr. Monk's two cases of sarcoma, although a cure was not obtained, there occurred changes of some significance. In the first case inoculated with cultures of the *Streptococcus erysipelas*—a large inoperable sarcoma of the right thigh—there was a partial disappearance of the growth, yet there was no microscopical evidence of retrograde metamorphosis, as was shown at the autopsy. In the second case inoculated, the tumor at one time appeared to have reached a quiescent stage. The patient recovered from the inflammatory reaction, and died many days afterward. No autopsy was obtained.

And in the last case of my list there appeared to be also a certain influence upon the tumors in the right labia and right inguinal region, besides the healing of the wound.

In addition to ten original cases, Dr. Coley has tabulated the reported cases of carcinoma and sarcoma in which erysipelas, either spontaneous or artificial, intervened, making up a total of thirty-eight cases. Of these cases, the erysipelas occurred accidentally in twenty-three cases, and was the result of inoculation in fifteen cases; seventeen cases were carcinoma; seventeen cases were sarcoma; four either sarcoma or carcinoma. The results were as follows: In carcinoma (seventeen cases), three cures, 17.6 per cent.; one death, 5.9 per cent. In sarcoma (seventeen cases), seven cures, 41 per cent.; one death, 5.9 per cent. Four carcinoma or sarcoma, two cured. From the figures it is evident that the curative action is more marked in sarcoma.

I will devote a brief consideration to the method of action of the *Streptococcus erysipelas*.

According to Ernst, bacteria produce their effect upon the living tissue in three different ways:

1. By mechanical obstruction.
2. By abstracting from the tissues of the body the material necessary for their own growth, and by so much depriving the tissue cells of nutrition necessary for their own development.

3. By the production, during their growth, and either by direct exciting metabolism or as the result of the chemical stimulus of the elements left in unstable equilibrium after their removal (as the bacteria have been abstracted, of new chemical compounds that are destructive to their own existence, and even to their further existence).

And now the question comes, In which way does the *Streptococcus erysipelas* produce its curative action upon carcinoma or sarcoma?

Dr. Coley's influence in the parallel origin of cancer, carcinoma and erysipelas is as follows: "A small quantity of blood serum of a normal or delayed immune to tetanus is applied to the tumor, or is considered about the violent growth of the tumor. It is quite absurd to understand that the true product of the erysipelas *Streptococcus* might

bring about such changes in the blood serum as to destroy the parasite of cancer. The parasite having been destroyed, the irritation would consequently cease, and this would lessen the hyperæmia of the parts, upon which factor the life of the tumor cells of low vitality largely depends.

Dr. Coley believes also that the phagocytosis theory is insufficient to explain the action of erysipelas. According to this theory, after the introduction of bacteria into the living tissues, certain cells of the body act as actual phagocytes, destroying by absorption the bacteria. I would venture to say that perhaps phagocytosis can not be absolutely discarded in view of the fact that in many instances repeated injections of cultures of the *Streptococcus erysipelas* have failed to produce the disease. Dr. Coley himself has reported eight of these classes of cases.

Was not this failure the result of the destruction of the streptococci by the phagocytes?

And is not the phagocytosis theory another reason for preferring the use of the toxic products of erysipelas to that of the cultures?

Conclusions.—1. The general infectious nature of erysipelas and its dangers should always be borne in mind. Marked prostration, cerebral symptoms, and septicæmia are not infrequent complications.

2. Accidental erysipelas has a curative influence upon granulating surfaces, but its use in the treatment of ulcers would be unjustifiable.

3. In the treatment of neoplasms by Dr. Coley's method of inoculation with the streptococcus of erysipelas we have a therapeutic agent which should not be employed indiscriminately.

4. There is a marked discrepancy between the clinical and the pathological evidences; Dr. Coley's cases of disappearance of neoplasms under his treatment with streptococcus inoculation contrast with the results obtained by Dr. Councilman at the autopsy.

5. Further investigations, especially with the toxic products of erysipelas, are necessary for the resolution of this important problem.

Before concluding I wish to acknowledge my indebtedness to Dr. W. T. Councilman, Dr. W. P. Bolles, Dr. F. S. Watson, Dr. G. H. Monks, Dr. H. W. Cushing, Dr. A. M. Sumner, and Dr. V. Bowditch, of the Boston City Hospital, for their kindness in allowing me to use the hospital records of the cases which I have discussed.*

Bibliography.

1. *American Text-book of Surgery*, 1892.
2. Coley. *American Journal of the Medical Sciences*, May, 1893.
3. Ernst. *Boston Medical and Surgical Journal*, vol. cxxix, p. 85.
4. Hyde. *Diseases of the Skin*, 1888.
5. Hospital Records. Boston City Hospital: *Surgical Records*, vol. C 25, vol. C 28, vol. C 29, vol. A-235. *Medical Records*, vol. A 368, vol. C 91.
6. Von Ziemssen. *Handbook of Skin Diseases*, 1885.

*Since this paper was first written Dr. Coley has published, in the July number of the *American Journal of the Medical Sciences*, an article entitled, Treatment of Inoperable Malignant Tumors with the Toxines of Erysipelas and the Bacillus prodigiosus.

No. 453 Cass Street, Milwaukee; Dr. William M. Leszynsky, to No. 959 Madison Avenue, New York; Dr. Charles E. Simmons, to No. 762 Madison Avenue, New York; Dr. E. S. Strout, from Ironwood, Michigan, to No. 3103 Nicollet Avenue, Minneapolis.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 16 to December 22, 1894:*

GLENNAN, JAMES D., Captain and Assistant Surgeon, is relieved from duty at Fort Sill, Oklahoma Territory, and ordered to Fort Snelling, Minnesota, for duty at that post.

MORRIS, EDWARD R., Captain and Assistant Surgeon, on the arrival of CLENDENIN, PAUL, Captain and Assistant Surgeon, at Fort Warren, Massachusetts, will be relieved from duty at that post, and will report for duty at Fort Spokane, Washington.

STARK, A. N., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect upon his return to Fort Sam Houston, Texas.

Promotions.

WILLCOX, CHARLES, First Lieutenant and Assistant Surgeon, to be Assistant Surgeon, with the rank of Captain, after five years' service, in conformity with the act of June 23, 1874. October 29, 1894.

McVAY, HARLAN E., First Lieutenant and Assistant Surgeon, to be Assistant Surgeon, with the rank of Captain, after five years' service, in conformity with the act of June 23, 1874. October 29, 1894.

FRICK, ENOLID B., First Lieutenant and Assistant Surgeon, to be Assistant Surgeon, with the rank of Captain, after five years' service, in conformity with the act of June 23, 1874. October 29, 1894.

Society Meetings for the Coming Week:

TUESDAY, January 1st: New York Obstetrical Society (private); New York Neurological Society; Buffalo, N. Y., Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (quarterly), Franklin (annual), and Niagara (semi-annual—Lockport), N. Y.; Hudson, N. J., County Medical Society; Union, N. J., County Medical Society (quarterly); Chittenden, Vt., County Medical Society; Androscoggin, Me., County Medical Association (Lewiston—annual); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, January 2d: New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, N. Y. (annual—New Brighton); Bridgeport, Conn., Medical Association; Penobscot, Me., County Medical Society.

THURSDAY, January 3d: New York Academy of Medicine; New York Neurological Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; University of Pennsylvania, Philadelphia; United States Army Medical Society (Washington); Washington, D. C., County Medical Society (annual—Montgomery).

FRIDAY, January 4th: Philadelphia Society of New York (private); Baltimore County Medical Society.

SATURDAY, January 5th: County Medical Society of the New York; Penobscot, Me., County Medical Association; and Hospital, Manhattan.

Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

PAYNE—CHOPPIN.—In New Orleans, on Wednesday, December 12th, Dr. W. B. Payne, of Virginia, and Miss Amelia Metcalfe Choppin, daughter of Mrs. Blanche E. Choppin, of New Orleans.

Died.

NORRIS.—In Brooklyn, on Friday, December 21st, Dr. Thomas P. Norris, in the sixty-third year of his age.

PARKES.—In Brooklyn, on Friday, December 21st, Dr. Thomas F. Parkes, in the thirty-first year of his age.

SUMNER.—In Providence, R. I., on Saturday, December 15th, Katherine S., wife of Dr. Ossian Sumner.

Letters to the Editor.

CÆLIOTOMY VERSUS LAPAROTOMY AS A SURGICAL TERM.

PITTSBURGH, Pa., December 1, 1894.

To the Editor of the New York Medical Journal:

SIR: Under this heading our excellent friend and beloved colleague, Dr. Robert P. Harris, of Philadelphia, has sent me an article condemning the use of the word "laparotomy." He also underscores with red ink the word laparotomy wherever it appears in my article in your *Journal* of November 3, 1894, and incloses it to me with his article referred to. "Laparotomy" as a surgical term is wrong, but it should be borne in mind that technical terms acquire validity from long usage, often in spite of an incorrect etymology. If, therefore, it can be shown that the term cæliotomy is also an incorrect term etymologically, we do not improve matters by rejecting for it the term laparotomy. My Greek is very rusty; it is thirty-two years since I was graduated at old Jefferson College, at Canonsburgh, Pa., but I will try with what Greek is left these two words, "laparotomy" and "cæliotomy," and the reader may decide for himself on the merits of the case.

Lapara in Greek is derived from an adjective which means *slack* or *loose*, and in the human body is applied to the *flank*, meaning the loose flesh between the ribs and the pelvic bones or the hip. In military parlance it is a technical synonym for our word *flank*.

From *lapara* and the verb *temno*, to cut, is derived the word laparotomy. Literally it means to cut the *flank*. It has acquired *validity from long usage*, but is etymologically incorrect.

Celia is the Latin, from the Greek word *koilia* derived from the Greek *kolion*, which means *hollow*, and in the human body means a *hollow viscus*, and was applied to the abdomen, heart, uterus, intestines, thorax, and stomach, etc.—any cavity of the body. Hippocrates applied it to the socket of the hip joint. The Greek adjective *koltaneus* was used to refer to anything contained in the abdomen or in any of its viscera; faces, for instance. From this word *koiilia* and the verb *temno* is derived the word cæliotomy. It means literally to cut open a *hollow viscus*, which the abdomen is not. It is no better than the term laparotomy, and lacks the validity from long usage which be-

Acute Poliomyelitis in a Hen.—Dr. CHARLES L. DANA stated that during the past summer, in the months of July-August and September, there had occurred in the neighborhood of Rutland, Vt., an epidemic of anterior poliomyelitis. Dr. Caverly, the health officer of the State, said that during this epidemic horses and fowls had become affected, and on September 18th he had sent to Dr. Dana a large Plymouth Rock hen for bacteriological purposes. This fowl, on its arrival here, had been paralyzed, and the owner of the brood, a physician, reported that several had died, the symptoms being similar to those noted in this one. The hen had been taken to the Carnegie Laboratory and a careful clinical examination had been made, which had revealed a paraplegia, not quite complete, and some paralysis of the wings; the head and neck muscles had not been affected; there had been no anesthesia. Dr. Dunn, who conducted the bacteriological examination, had inoculated several culture-tubes from the spinal cord and meninges, and had also taken several sections from the cord and made smear stains, all with a negative result. The spinal canal of the animal had been opened, but no evidence of meningitis had been found, and there had been no signs of hemorrhagic extravasation. After the action of Müller's fluid and staining, a distinct area of softened tissues had been seen in the central part of what might be termed the lumbar region of the cord. The destructive process had been quite extensive, the congestion had been intense, and there had been several hemorrhages. From the appearance of the cord, it appeared that there had been an acute exudative inflammation, and that the process had been so severe that necrosis had come on before the inflammatory reaction; hence it was practically a case of acute infectious softening rather than myelitis. Dr. Dana said that, while this case might not have any actual value, yet to a certain extent it corroborated the infection theory of anterior poliomyelitis, and, so far as it went, it supported the view that in this disease the changes were primarily vascular and not parenchymatous.

Dr. PUTNAM stated that, at an autopsy made in a case of anterior poliomyelitis of two months' standing in an adult, he had found that the necrotic process had been distinctly confined to the area immediately surrounding the vessels.

Dr. STARR stated that while on a visit to Vermont last summer he had seen a number of the cases of anterior poliomyelitis referred to by Dr. Dana. Within a radius of perhaps twenty-five miles about a hundred and sixty cases of the disease had occurred between the 25th of July and the 1st of September. Dr. Starr said he had seen about a dozen of these cases. The epidemic had first been regarded as one of cerebro-spinal meningitis, but from the lack of sensory symptoms and from the peculiar distribution of the motor symptoms, the speaker said he regarded them as true cases of anterior poliomyelitis. Sensory symptoms had been present in some of the cases, but he had often found in anterior poliomyelitis, in patients under the age of twelve years, that hyperesthesia and stiffness of the muscles were among the first symptoms complained of.

Dr. B. remarked that in Vermont the epidemic had been regarded as anterior poliomyelitis as epidemic. Epidemics of the disease had been observed in other localities. In his own practice he had noticed that in the larger number scattered during the warm weather. It was probable that we must include this disease among the group of infectious diseases. He had observed some cases that had been actually as true as we whether the disease was caused by a virus or by a bacterium. In several cases of the latter disease, Dr. B. had observed that the motor symptoms had been a more characteristic group.

Dr. A. stated that on August 1st he had received a letter from Dr. Caverly stating that epidemic in Vermont in

which he had described a number of the cases, particularly emphasizing the fact that there had been a good deal of hyperesthesia. Basing his conclusion on these data, Dr. Jacobi said, he had expressed the opinion that the epidemic had been one of cerebro-spinal meningitis, as the manifestations of that disease differed widely at times. Since then, however, he had received more detailed information regarding the cases from Dr. Starr, who had examined many of the patients, and he now had no doubt that the epidemic had been one of anterior poliomyelitis.

Dr. A. D. ROCKWELL stated that two of these cases had been examined by him. In one the hyperesthesia had been very distinct and he had been inclined to regard them as cases of cerebro-spinal meningitis.

Dr. STARR called attention to the fact that in the classical descriptions of anterior poliomyelitis so little mention was made of the pain and stiffness and hyperesthesia. The reason for this probably was that so few cases of the disease were diagnosticated as such until they had gone on for a week or two, and by that time the sensory symptoms had practically disappeared. If this newer pathology of the disease was correct, and it was due to a congestion of the cord, sensory symptoms were undoubtedly present.

Dr. PUTNAM said that in the case already referred to by him the hyperesthesia had been excessive; so much so, that he could hardly doubt that peripheral neuritis had also been present. In all other respects the symptoms had been typical of anterior poliomyelitis.

Dr. JACOBI said there were two distinct classes of cases in this disease. In one class, that referred to by Dr. Starr, there were fever and hyperesthesia at the beginning, but these symptoms were readily obscured in cases where the myelitis came on during the course of another disease—such as scarlet fever, pneumonia, etc. The acute symptoms were ascribed to the latter disease, upon recovery from which it was found that the child was paralyzed. In the other class of cases, and probably the large majority were of this character, the child was put to bed quite well and when it was taken up in the morning it was found to be paralyzed; there was no fever or hyperesthesia; there was not even an outcry in the night.

Dr. LANDON CARTER GRAY said he agreed with Dr. Jacobi that cases of anterior poliomyelitis like those last described were very commonly met with; yet there were a certain number where the patients had unquestionable sensory symptoms, which we were often apt to attribute to a neuritis. It was a fact that this disease usually occurred during the hotter months, and this subject had been carefully studied some years ago by Dr. Weir Mitchell and Dr. Sinkler; they had also shown that chorea was not dependent on temperature, but rather on barometric fluctuations.

Dr. G. M. HAMMOND inquired whether the diagnosis in the hen had been based on the clinical symptoms or the pathological condition of the cord. In anterior poliomyelitis we were apt to associate a certain group of symptoms with certain pathological changes in the cord. In the microscopical sections exhibited by Dr. Dana the anterior horns appeared to be symmetrical and the changes did not appear exactly similar to those we found in the true disease.

Dr. DANA replied that in some of the sections, which he had been unable to bring with him, the lesion in the cord had been very marked. In some there had been a distinct loss of substance, with softening and hemorrhage.

Dr. TREMENT said that in the diagnosis between anterior poliomyelitis and cerebro-spinal meningitis the extreme muscular atrophy which we found in the former would not be so apt to be present in the latter. The electrical reactions, too, might

aid us. Sensory symptoms, he thought, were often present in anterior poliomyelitis, and were apt to be overlooked.

Some of the Important Aspects of the Therapeutics of Diseases of the Nervous System. Dr. JAMES J. PUTNAM, of Boston, read an interesting paper on this subject. The greater portion of his paper was devoted to a critical study of psychical therapeutics, or mental influence in certain forms of nervous disease, with special reference to neurasthenia. This method of treatment, he said, systematically carried out, often produced excellent results, not alone in functional, but even in organic nervous disease. Among the methods of psychical influence employed by him, the author mentioned static electricity as one of special value. As regarded electro-therapeutics in general, he was not prepared to accept the dictum of certain French writers, and assert that its benefit was wholly due to its influence on the mind. Among other forms of mental influence, Dr. Putnam mentioned waking and hypnotic suggestion; as regarded hypnotism, he stated that, while he was not particularly in favor of it, the time had come when we ought to recognize what there was of value in it. This agent should never be employed except by one who was skilled in its use, or, if the patient's own physician undertook it, he should be content to induce a moderate degree of hypnotism. In one case which had come under his observation, that of a young woman with spastic paraplegia of several years' standing, numerous attempts made to hypnotize her had never succeeded beyond the production of the first stage; through suggestions made to her while in this condition she had partially regained the use of her legs, and the improvement had been permanent.

Among other therapeutic measures referred to by the author which he had found valuable, especially among dispensary patients, where the need of better methods for the treatment of nervous diseases had long been felt, was gymnastics, including the formation of classes for calisthenics, massage, and hydrotherapeutics. During the past year he had treated fifteen cases of chronic spinal disease, six of which he regarded as cured, which he regarded as wholly empirical. In almost every instance these patients had done the exercises required, he regarded both eyesight and general condition.

Dr. Putnam stated that during the past few months he had tested the Flechsig treatment of epilepsy by means of large doses of opium, and he referred to a paper on this subject by Dr. Joseph Collins (*Medical Record*, September 22, 1894). The treatment had been employed in ten cases; in none of them had the attacks been wholly checked, but in all of them an improvement had been noted. The opium had given good results in twelve cases, but in only one of these had the attacks been wholly checked.

[illegible]

agreed in many cases of American politics and in social activity.

Dr. WILLIAM H. THOMSON referred to the value of newness or change as a psychological therapeutic measure in nervous diseases, and narrated the histories of a number of cases in which remarkable improvement had followed a change of scene and surroundings.

Dr. B. Sachs said it was alleged by some that hypnotism had not met with the reception in America which it deserved, and that one reason for this was that we were still subject to the old idea that the physician must prescribe; that we were altogether too fond of drugs. Personally, he regarded it as a therapeutic measure which was of value in comparatively few cases. After a thorough and impartial trial, his own experience with it had been anything but satisfactory.

Dr. MARY PUTNAM JACOB¹ stated that she had found static electricity almost a specific for dissipating muscular pains, whether rheumatic, hysterical, or other, even if such pain had entirely resisted the galvanic or faradaic currents.

Dr. ROCKWELL stated that he had employed static electricity for many years, and expressed the opinion that its value had been very much over-estimated; its slight quantity gave it comparatively little value as compared with other forms of electricity.

Dr. STARR said it seemed to him that the reason why Dr. Weir Mitchell's rest treatment was so successful was that it combined most of the different elements which had been mentioned by the various speakers. There was first the expectation from a course which had been of benefit to others; this was combined with a trip to Philadelphia, a change of scene, and an entire change in the patient's daily routine of life. The speaker also referred to the value of hydrotherapeutics, which made an intense mental impression on the patient.

Dr. MARY PUTNAM JACOB said that one writer, probably humorously inclined, had made the assertion that the beneficial effects of hydrotherapeutics were more pronounced in France than in England because no French person ever took a bath.

Dr. Joseph Flechsig will be well known to the majority of discussing the Flechsig treatment of epilepsy with its originator, who, although not so enthusiastic regarding it as he

AMERICAN ASSOCIATION OF GASTROENTEROLOGY
SYMPOSIUM

Eighty-fourth Meeting, held in Washington, May 20 to June 1, 1964.

The President Dr. George C. Smith, of San Francisco, led the Choir.

Rupture of the Urethra.—Dr. F. and S. W. report that this condition is rare in this country. One had come reported some 20 years ago. It often occurs before the growing period, and is the result of some injury to the faculty of urination, causing the urinary fluid to find some other channel of exit, and thus the urinary apparatus is badly damaged. The

[illegible]

the urine with the injured urethra. The urethra had then been cut down and repaired. The man had made a good recovery and at the present time a No. 29 sound could be passed into the bladder.

Four other cases of rupture of the urethra were reported by the author. In all of these the injury had been received during coitus. In one of them the accident had been followed in a few days by extensive infiltration of urine and gangrene of the entire skin of the penis. Skin grafting by Thiersch's method had been employed and very good results had been obtained.

The Treatment of Cystitis.—Dr. GARDNER W. ALLEN, of Boston, read a paper on this subject, based on the records of a number of cases which had come under his observation during the past eight years. Many of these cases had been of gonorrhoeal origin, and in nearly all the inflammation had been confined to the neck of the bladder. Extension of gonorrhoea into the neck of the bladder, accompanied by a sharp onset of urinary symptoms, was, of course, common enough. In non gonorrhoeal cases the cause of the cystitis was not always clear, but in a certain number the disease was apparently traceable to a posterior urethral catarrh resulting from congestion of the prostatic portion, with or without inflammation of the seminal vesicles, and brought about by prolonged and repeated sexual excitement. It began insidiously, had little or no tendency to recovery, and was apt to prove intractable to treatment.

As regarded the treatment of cystitis, of the various internal remedies the author said that he preferred the saline diuretics, especially benzoate of sodium. Few surgeons nowadays, however, long deferred local treatment of the disease. For the simple purpose of washing out the bladder, perhaps a saturated solution of boric acid gave, on the whole, the best results. For the purpose of producing a decided impression upon the mucous membrane of the vesical neck the author said that he had had very gratifying experience with nitrate of silver and permanganate of potassium. Of the nitrate of silver, he rarely used it stronger than in a one-per-cent. solution, injecting from ten to fifteen minims. The injections appeared to be more effectual if preceded immediately by the passage of a large sound, excepting in the more acute cases. Permanganate of potassium he had found to be very efficacious in cystitis and chronic prostatitis. Where it failed nitrate of silver often succeeded, and *vice versa*. The bladder should be thoroughly irrigated with the permanganate solution (1 to 4,000 or 1 to 5,000), and this was conveniently done by means of a large Fitzmaurice syringe connected with a soft-rubber catheter. One syringeful at a time was injected and allowed to flow out again, and this was repeated until the solution came away with its color unchanged. Then two or three ounces were injected and left in the bladder as long as they could be comfortably borne. The author then detailed the histories of a number of cases of cystitis that had come under his observation.

Dr. BRANFORD LEWIS, of St. Louis, said that according to his experience none of these various remedies mentioned by Dr. Allen could be depended on in every case. In some instances the results obtained from them were not observed until after a suprapubic incision.

Dr. MARRAS said that the new suprapubic remedy, if successful, promised to be a great benefit to the patient. It was a possible relief in many cases of chronic cystitis.

Aero-lithotomy, with a New Instrument.—Dr. W. J. WATSON, of New York, read a paper on this subject, and exhibited a new instrument for the purpose. He presented a slide showing the instrument in use, and a diagram of the instrument. He also presented a diagram of the instrument in use, and a diagram of the instrument. He also presented a diagram of the instrument in use, and a diagram of the instrument.

and for the purpose of making topical applications the urethral speculum was equally good. He also exhibited an instrument which he had devised for the purpose of facilitating catheterism of the male ureters.

Dr. BELFIELD showed an instrument which he had devised for the purpose of securing a view of the deep urethra. Also a longer one, by which a good view of the bladder might be obtained in the region of the trigone.

Dr. F. TILDEN BROWN, of New York, exhibited a perineal tube-holder intended for cases in which long-continued drainage of the bladder through the perineum was indicated.

Dr. Brown showed, too, a modification of the Clover crutch for perineal operations, also an improved needle-holder.

Stone in the Bladder; the Choice of Operation.—Dr. WILLIAM H. HINGSTON, of Montreal, read a paper with this title, in which he gave the following conclusions:

He would choose lithotomy in all cases of adults where the stone was neither too large nor too hard for the lithotrite. By lithotomy, he said, he meant the more perfect method which had been foreshadowed by Mercier in France and brought to its highest perfection in America. He would choose lithotomy where the urethra was or could be made sufficiently capacious for the crushing instrument, also in children, however young, where the urethra would permit the passage of a crushing instrument. In very young children the cutting operation was preferable. The age at which lithotomy was possible must vary with the caliber of the canal, which in young children greatly varied. When the urethra in the child was not and could not be made fit to receive the lithotrite, the cutting operation to be chosen was the lateral method.

In cases of stone in the aged, where an enlarged prostate prevented the stone being seized, we should act as if the stone were of large size and incapable of reduction, and proceed to operate by the suprapubic method. Surgical interference in cases of calculus in the female remained the same as heretofore. The method employed years ago by Erichsen, Thompson, and others had since been followed, and stones of large size were removable generally *per vias naturales* after dilatation. In cases of exceptionally large calculi the lithotrite commonly sufficed, and rarely indeed was the surgeon obliged to resort to the knife.

The PRESIDENT said that in cases where we found the bladder stretched cap-like over the enlarged prostate, a small stone might evade every possible instrument which we could introduce through the perineal incision. He had never encountered a stone weighing more than a thousand grains. Calculi nowadays did not seem to attain the large size they did in former years. This was probably due to the fact that patients sought relief earlier now than they did formerly.

Dr. ARNER POST, of Boston, said that during the past year he had had a patient under his care who had been also affected with hip disease from childhood. On account of the attitude of the limbs it had been impossible to get him into the litholapaxy posture, and he could not be operated on through the perineum. The bladder had accordingly been opened above the pubes.

Dr. BAXTER said that in some of these cases it might be necessary to make such a choice of a cutting operation, so that the bladder and pelves of the kidneys might be properly drained.

Dr. JUDKINS referred to a case in which one of the stitches in a suprapubic wound had been torn out during a fit of coughing, and some time afterward the stitch had been passed *per urethram*, thickly covered with phosphatic deposits.

Dr. BAXTER said that he had operated in a number of cases in which the stone had rested behind the prostate, which had obstructed the outflow of urine and had set up cystitis; in two of these cases he had afterward been compelled to do a lateral

ting operation, the distinct object in view being to remove the obstruction which had produced the cystitis and which had resulted in the formation of secondary calculi.

Dr. HINGSTON said that he was not wedded to any particular method of operating. He expressed the opinion that there was no condition of the kidney or bladder in which lithotripsy was not as good an operation as lithotomy. He did not care what the condition of the urine was, whether it was loaded with pus or not. The source of the trouble was the stone and it should be removed.

Urine Leakage and Stricture Formation.—In a paper on this subject Dr. J. P. Bussan, of St. Louis, made a comparative study of the histology of structure of two urethra and those of an old urinary fistula, and illustrated it with a number of drawings of microscopical sections. His conclusions were as follows:

1. The close resemblance in the tissue elements, their arrangement and effects upon the related normal structures, pointed to an identity of the ætiological factor, and gave support to the doctrine of urine leakage.

2. Observing the prolongation of the urethral epithelium on the fistula wall in an effort to create an adequate artificial channel for urine, and seeing that the epithelium lining the stricture also participated in the battle against urine leakage, we might take fresh hope of radically curing strictures, even of the pendulous urethra, by such means as tended to restore or rehabilitate the urethral lining.

3. Merely diverting the stream of urine for a time, without such restoration of the lining mucous membrane, would fall into the category of the palliative treatment along with urethrotomy and the various methods of dilatation.

Dr. R. W. TAYLOR, of New York, said that the title inflammatory stricture could only be applied in cases where there was a round-celled infiltration in a still lingering state of congestion and inflammation. The inflammatory stage of the stricture was that during which exudation was present. The pathologic conditions found in these cases hardly warranted the theory of urine leakage suggested in the paper, which thus far must be regarded as pure assumption.

Dr. Bryson said that he did not contend that the doctrine of urine leakage was definitely settled. He simply presented his paper as a contribution to the study of this difficult problem.

The Possibility of Overcoming Permanent Stricture of the Deep Urethra without Resort to External Urethrotomy. In a paper on this subject, Dr. J. Bruce Wright, of New

[illegible]

tlism, especially in certain cases, for a considerable period after the immediate causes of reflected irritation had been removed. The character of the lesion, always associated with some degree of spasm, was such that it might be overcome by patient dilatation after the remote causes of spasmodic contraction had been removed by appropriate treatment. He then gave the history of a case in which there had been constant spasm of the urethra combined with a deep, non-traumatic stricture, which had been relieved by careful dilatation with graduated sounds after the obstructions in the anterior urethra had been removed.

Dr. TAYLOR said that spasm of the *compressor urethrae* muscle was a great bugbear. It was assumed that this muscle was in a continual state of great tonic. As a matter of fact, this was not so, and in the great majority of cases a soft catheter could be passed into the posterior urethra with little or no trouble. As a result of inflammation in the anterior urethra the compressor muscle undoubtedly did contract, and this constituted spasmodic stricture. It was possible that some of the spasm in Dr. White's cases had been due to the use of instruments.

Dr. WATSON said that, while he did not favor the division of strictures in the deep urethra, he did not know where the idea had originated that the operation was attended by a high mortality rate. He thought one per cent. was the highest mortality rate reported.

Dr. W. K. Otis said that both Sir Henry Thompson and Dr. Bulkley had abandoned the operation because of the high mortality.

Dr. TAYLOR said that the late Dr. Van Buren and Dr. F. N. Otis had given it up for the same reason.

Dr. Bryson said that he regarded dilatation as a most rational and scientific method in the treatment of stricture, and very few strictures failed to yield to careful and intermittent dilatation. Certainly by mere division of the stricture we accomplished nothing.

Dr. Hixson said that in the treatment of stricture he favored the method adopted by Dr. F. N. Otis—that was, gentle dilatation, occasionally with division.

Dr. F. TILDEN BROWN said that Dr. White, in his paper, had reported an example of a very clear-cut type of cases. He did not see why such conditions of spasm—or partly spasm and partly cellular infiltration—should be regarded as the outcome of the use of instruments.

Dr. W. K. Otis said there was no doubt that most strictures would be clipped in a single year. He noted some benefits cutting would give more permanent benefit. As regarded spasmodic stricture, he felt most many cases could be cured and that part think were due to the use of instruments.

Dr. WHEAT: And he was positive that in this case reported by him the spontaneous striation could not be attributed to such a cause.

[REDACTED]

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

doi:10.1017/S002229240000199

THE PRESIDENT, DR. JEROME D. DODD, to the Class.

Pulse Symphytomy. 177. H. J. FAY (University of Kansas). The Symphytomy of the Heart. In: *Journal of the American Medical Association*, 1960, vol. 175, no. 12, pp. 1585-1588.

What disposition now arises? What disposition should be made of the body during treatment, and what sanitary measures should be adopted in addition to the medical treatment? When the body is first found to be affected with hog cholera, sometimes in the lot or pens where they have been confined

INDEX TO VOLUME LX

	PAGE		PAGE		PAGE
sion of the Tongue, Velum Palati, and Uvula, complicating Maxillary Neuritis.....	617	Wright, J. S. T. Epilepsy, Keen.....	29	Wright, J. P. The Hygiene of the Nose.....	
Westgate, L. A. A Menstrual X-ray, the Ectromy of the Abdominal Viscera, and Childbed.....	295	Wright, N. L. P. Zosteritis as a Cause and as a Method of Treatment of Lateral Curvature.....	300	Wright, J. P. The Hygiene of the Nose.....	34
Wheland, J. B. The Necessity of Prompt Operative Treatment in Acute Otitis.....	296	Wright, E. W. An.....	298	Wright, J. P. The Hygiene of the Nose.....	364
Wheriting George, The Infant's Aspects of.....	836	Wright, W. L. The.....	300	Wright, J. P. The Hygiene of the Nose.....	364
Wheeler, A. A Case of Salivary Enlarged Bilobar Pylor.....	31	Wright, J. A. The.....	300	Wright, J. P. The Hygiene of the Nose.....	364
Wiggins, F. H. Intestinal Vasculitis.....	614	Witnesses, The Rights and Duties of Medical.....	300	Wright, J. P. The Hygiene of the Nose.....	364
Wiggins, F. H. Letter to the Author.....	62	Women, The Care of Pregnant.....	401	Wright, J. P. The Hygiene of the Nose.....	364
Wight, J. S. Notes on the Treatment of Suppuration, Tuberculosis, Lymphatic Sarcoma, and Cancer.....	301	Wood, C. A. The Treatment of Epilepsy by.....	401	Wright, J. P. The Hygiene of the Nose.....	364
		Wood, W. W. The.....	401	Wright, J. P. The Hygiene of the Nose.....	364
		World Drainage and Fluvial Engineering.....	401	Wright, J. P. The Hygiene of the Nose.....	364

THE New York Medical Journal.

A WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M.D.

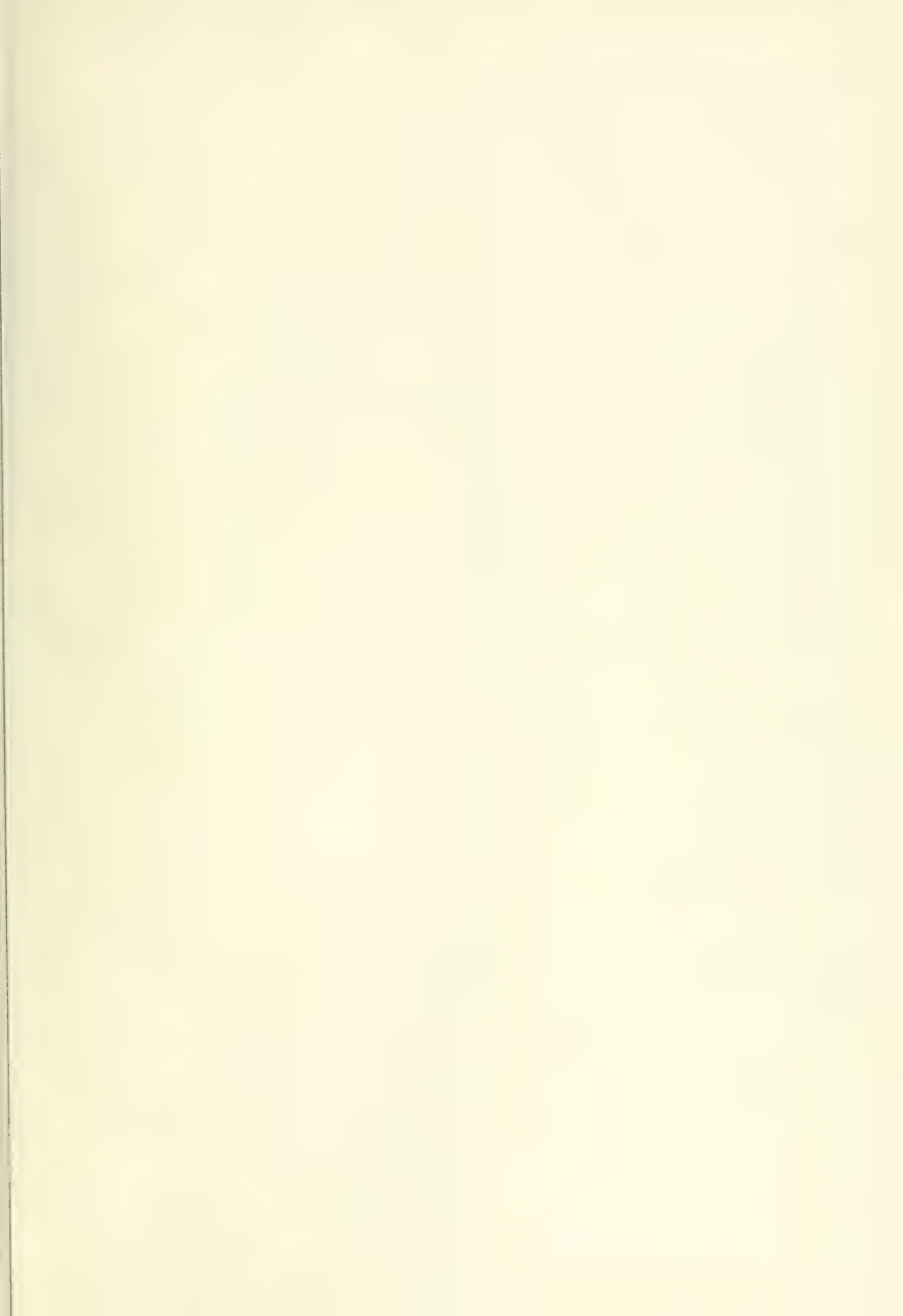
THE PHYSICIAN who would keep abreast with the advances in medical science must read a *live* weekly medical journal, in which scientific facts are presented in a clear manner; one for which the articles are written by men of learning, and by those who are good and accurate observers; a journal that is stripped of every feature irrelevant to medical science, and gives evidence of being carefully and conscientiously edited; one that bears upon every page the stamp of desire to elevate the standard of the profession of medicine. Such a journal fulfills its mission—that of educator—to the highest degree, for not only does it inform its readers of all that is new in theory and practice, but, by means of its correct editing, instructs them in the very important yet much-neglected art of expressing their thoughts and ideas in a clear and correct manner. Too much stress can not be laid upon this feature, so utterly ignored by the “average” medical periodical.

Without making invidious comparisons, it can be truthfully stated that no medical journal in this country occupies the place, in these particulars, that is held by THE NEW YORK MEDICAL JOURNAL. No other journal is edited with the care that is bestowed on this; none contains articles of such high scientific value, coming as they do from the pens of the brightest and most learned medical men of America. A glance at the list of contributors to any volume, or an examination of any issue of the JOURNAL, will attest the truth of these statements. It is a journal for the masses of the profession, for the country as well as for the city practitioner; it covers the entire range of medicine and surgery. A very important feature of the JOURNAL is the number and character of its illustrations, which are unequalled by those of any other journal in the world. They appear in frequent issues, whenever called for by the article which they accompany, and no expense is spared to make them of superior excellence.

Subscription price, \$5.00 per annum. Volumes begin in January and July.

PUBLISHED BY

LEA, WHEELER & CO., 514 Fifth Avenue, New York.





R
11
I65
v. 60

International record of
medicine

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

